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THE DEPENDABILITY AND MEANING OF UNEMPLOYMENT AND EMPLOYMENT STATISTICS IN THE UNITED STATES

By ROYAL MEEKER

IN spite of the prodigious quantities of statistics on a thousand subjects ground out by our public and private statistical factories, we still lack reliable statistics on a number of important subjects. The deficiencies or absence of statistics of occupational sickness, yearly per-capita earnings, cost of living, and unemployment, are most serious and regrettable. In the absence of such statistics, it is impossible to compare satisfactorily the degree of well-being of the masses of the people past and present. In this paper I discuss unemployment and employment statistics and indicate that oftentimes conclusions which are confidently based upon some of these figures must be rejected or mixed ton for ton with the saving salt of skepticism.

I. Unemployment Statistics

A study of the results of the modern industrial system should logically begin with employment and unemployment because employment is its basis and unemployment is its greatest menace and the most serious of all social ills. There must be jobs before we can gather and compile statistics about hours, wages and earnings of labor, or make any estimates or guesses as to the adequacy of the pay and the opportunities for leisure of our workers. Since employment is obviously the beginning of all social statistics, it might reasonably be expected that statistics relating to employment and the lack of it would be the first labor statistics to be inaugurated and developed. But when the worker, the employer, and the statesman ask for unemployment statistics they are handed guesses by guessers who are often more interested in the politics than in the economics of unemployment.

The traditional visitor from Mars would be utterly astounded to learn that in this fact-flooded country we have only guesses as to how many of those classified by the Census Bureau as "gainfully employed" are really working at "gainful" jobs. Exactly what "gainfully employed" means in money and real income is also vague and undetermined. Our lack of knowledge

about unemployment and our failure to set up any system by which recurring industrial crises can be at least mitigated and their evil consequences partially avoided is no tribute to our intelligence and the kind of civilization we have evolved. This failure to ascertain the facts and to work out a policy to deal with unemployment is the more amazing in the United States at this time when "fact finding" is being so tremendously stressed. Douglas is so thoroughly annoyed with the lack of dependable unemployment statistics in the United States that he is moved to say: "Unfortunately, the American statistics of unemployment are the worst of any industrial country in the world."[1]

It is, perhaps, going too far to assert that we are the worst among all industrial countries in our lack of unemployment statistics, for it is only in those industrial countries which have a well-established system of unemployment insurance, that statistics of unemployment are at all complete and dependable. However, it would be a waste of time to cite evidence to prove that, bad as our statistics in this field undoubtedly are, those of France and some other countries which may properly be classed as industrial countries are still worse.

Censuses of Unemployment

The Bureau of the Census has taken three censuses of unemployment for the years 1889, 1899, and 1909, respectively. The figures for 1909 were never tabulated. The census schedules required that all workers who had been unemployed during the year preceding the census year, should be recorded and classified as having been unemployed for 1 to 3 months, 4 to 6 months, or 7 to 12 months inclusive. When we consider the great burden of work devolving upon the census enumerators, their lack of training in dealing with the intricacies of employment and unemployment, the vagueness of the queries and the length of time supposed to be covered, it becomes obvious that the answers obtained must have been mere guesses except in case of recent months or excessively long periods of unemployment which could not be forgotten. Since the schedules called for classification by three-month and six-month periods, presumably unemployment for periods of less than one month were not reported. It would seem then that the "facts" relating to unemployment contained in the volumes of the eleventh and twelfth censuses are practically valueless and that the gathering and tabulating of these "facts" were largely a waste of money and effort.

To the regret of all students of economics, the census figures for 1909, collected and punched on cards at very considerable expense, were never tabulated. It has been alleged that the tabulations were held up by "politics." The fact seems to be that the costs of tabulating the returns were underestimated in the original Census appropriation for 1910, and it was not possible to convince Congress that a deficiency appropriation was necessary in order to make the figures available, especially as the value of the figures was held to be very doubtful. It is doubtless true that many schedules filled out in this census of the unemployed were imperfect and even erroneous. Nevertheless, even a very imperfect census would have been much better than nothing. A census of unemployment is, at best, of very lim-

[1] Douglas, Paul H., *Real Wages in the United States, 1890–1926*, p. 12.

ited value. All it can show is the number reported as unemployed for varying numbers of days, weeks, or months in a period which is ancient history to the social economist before the figures are collected, to say nothing of tabulations and final publication. The weekly, monthly, and seasonal fluctuations in unemployment even for a single year cannot be calculated with acceptable accuracy unless the census is to be repeated at least twice a year, which under the existing conditions is out of the question. Had the decennial censuses of unemployment been continued, however, the Bureau of the Census would have been able to improve upon its schedules and methods of tabulation, so that we should not now be obliged to start at the beginning in the census of unemployment for 1930.

Bureau of Labor Statistics Studies

The census figures of unemployment would have been of great value in 1915 when, with the cooperation of the Bureau of Immigration, the United States Bureau of Labor Statistics made two unemployment surveys in New York City, the first in January and February, the second in September, 1915.

During the spring and summer of that year, the generous aid of the Metropolitan Life Insurance Company enabled us to extend the survey to 28 other cities throughout the country. This survey was unique, in that a private company did the job for the Federal Government without any compensation. The agents of the Metropolitan filled in the unemployment schedules formulated by the United States Bureau of Labor Statistics, and the data were tabulated by the company under my general direction. The patriotic services rendered by the officials and employees of the Metropolitan deserve the highest praise, but it is humiliating to note that, in the vitally important matter of unemployment, the facts needed were not available, and that lack of funds rendered the Federal officials helpless to obtain the required information. Had it not been for the philanthropic service rendered by this private insurance company, information in regard to unemployment outside of New York City in 1915 would be almost wholly lacking.

The Metropolitan surveys of course were confined to the industrial policy holders of the Metropolitan Life Insurance Company, but their policy holders were so many and so widely distributed among industries and income classes as to seem fairly representative of workers in general. The company had already made a survey of unemployment in New York City, which showed 18% of unemployment as against 16.2% found by the United States Bureau of Labor Statistics in its own survey. Because the industrial policy holders of the Metropolitan seemed representative of workers, the company's offer to make the survey under my general direction was accepted.

Very complete information was called for on the schedules, so that, in the final tabulations, the number and percentage of part-time workers is shown as well as full-time unemployment classified by industries, duration in days, and causes. The results of the four surveys of 1915 were published in United States Bureau of Labor Statistics Bulletin No. 172, *Unemployment in New York City*, and No. 195, *Unemployment in the United States*. The two surveys by the Metropolitan Company deserve careful study, both because of the large numbers of workers included and because of the complete-

ness of the information secured and tabulated. The size of the sample is large enough to inspire confidence even though the percentage of workers covered varies considerably in the several cities.

was in Ogden, Utah, 4.5% (part-time 14.3%). The highest part-time employment was in San Diego, California, 29.2% (unemployment 16.7%). The lowest part-time employment was in Butte, Montana, 12.7% (unemployment, 7%).

TABLE 1. SUMMARY OF UNEMPLOYMENT SURVEY IN 16 CITIES, APRIL, 1915

City	Number of Families Canvassed	Per Cent of Families with Unemployment	Number of Persons in Families	Number of Wage Earners in Families	Unemployed		Part-time Workers	
					Number	Per Cent	Number	Per Cent
Boston, Mass.	46,649	14.1	207,956	77,419	7,863	10.2	13,426	17.3
Bridgeport, Conn.	8,144	6.1	32,144	12,533	537	4.3	2,493	19.9
Chicago, Ill.	96,579	17.5	414,675	157,616	20,952	13.3	16,575	10.5
Cleveland, Ohio.	16,851	11.6	67,787	24,934	2,348	9.4	3,060	12.3
Duluth, Minn.	1,383	24.7	6,596	2,089	425	20.3	371	17.8
Kansas City, Mo.	14,890	15.6	53,437	22,512	2,815	12.5	1,979	8.8
Louisville, Ky.	1,667	19.7	7,238	3,036	399	13.1	842	27.7
Milwaukee, Wis.	8,813	9.9	36,346	13,112	1,030	7.9	3,788	28.9
Minneapolis, Minn.	2,206	17.5	8,571	3,449	495	14.4	183	5.3
Philadelphia, Pa.	79,058	14.2	346,787	137,244	14,147	10.3	26,907	19.6
Pittsburgh, Pa.	36,544	13.6	155,763	53,336	5,942	11.1	15,474	29.0
St. Louis, Mo.	65,979	17.2	258,669	104,499	14,219	13.6	14,317	13.7
St. Paul, Minn.	2,515	17.9	10,782	4,135	582	14.1	142	3.4
Springfield, Mo.	1,584	8.4	6,199	2,284	162	7.1	32	1.4
Toledo, Ohio.	7,233	12.8	28,045	10,312	1,102	10.7	1,801	17.5
Wilkes-Barre, Pa.	11,453	8.6	53,900	18,884	1,200	6.4	6,104	32.3
Total.	401,548	15.0	1,694,895	647,394	74,218	11.5	107,494	16.6

Taken from the United States Bureau of Labor Statistics Bulletin No. 195, *Unemployment in the United States*, p. 6.

During June and July, 1915, the Metropolitan extended its survey to include 3 cities in the Rocky Mountain States and 9 cities in the Pacific Coast States. The sample secured from these 12 cities was much smaller than for the first 16 cities, because the proportion of Metropolitan policy holders was much smaller. However, the sample seems sufficient so far as numbers are concerned. There were 36,537 families with 137,901 members, 49,333 wage earners, 6,373 unemployed, and 9,971 part-time workers. The average full unemployment was found to be 12.9%, with part-time employment 20.2%. The highest unemployment was in Portland, Oregon, 20% (part-time 17.3%). The lowest unemployment

The Bureau's survey of unemployment in New York City in January and February, 1915, showed 16.2% unemployment. Its resurvey in September showed only 6.7% of workers unemployed. No statistics of part time were collected. The Metropolitan made a resurvey in September which showed 9.1% of unemployment, or nearly 36% more unemployment than was found by the Bureau. This discrepancy is disturbing, but it is probably due to differences in methods and in the sections of the working population covered. The Bureau, after consultation with agencies and individuals best able to advise, selected certain areas within Greater New York for investigation. Within these areas, 104

city blocks arranged in checker-board fashion were chosen, and a complete census was taken of each of these blocks. The Metropolitan, as already indicated, made a complete canvass of its industrial policy holders, and probably included some who were not at the time actual policy holders.

Criticisms of the Bureau's Methods

Douglas criticizes these unemployment statistics on three important points:[2] (1) they are for cities only and may exaggerate the amount of unemployment, (2) they included only those unemployed at the time of the survey and thus did not get a measure of unemployment for the entire year, and (3) the percentages of unemployed in different industries could not be calculated because the occupations of the employed included in the survey were not ascertained.

In regard to the first criticism, of course the survey could include only those cities in which the Metropolitan had large numbers of policy holders. Except for Springfield, Missouri, no small cities were included. Undoubtedly the percentage of unemployment was and still is very much higher in the large cities than in small cities, towns, and the country. Certainly the percentages found in the 29 cities should not be taken as indicative of the country as a whole.

Regarding Douglas' second criticism, it is worthy of note that the unemployment census of 1930 now in progress, calls for the enumeration of only those unemployed on April 1st or on the day of the enumerator's visit. The Census officials feel that to ask for the number of days, weeks, or months every worker was unemployed during the past year is to ask the impossible. They think it is possible to obtain a cross section of unemployment on a given day of the year, but they feel that the former censuses were practically useless as records of the total unemployment throughout a year. Director W. M. Stewart very justly observed at one of the conferences on the unemployment schedule that it was better to ask for a little information and get it than to ask for a lot and not get anything usable.

Douglas' third criticism is well taken, but it should be said by way of explanation that this survey was an act of public charity on the part of a private corporation. The scope of the inquiry and of the tabulations had, therefore, to be kept within the limits of voluntary philanthropic effort. Besides, the total amount of unemployment seemed to be of more interest to the country at that time than detailed information by industries and occupations. I would add that it is possible, by using some heroic assumptions, to work out the probable numbers employed in the different occupations included in the surveys and from these synthetic figures to compute the percentage of unemployment by occupations.

There is no means of knowing how dependable a sample of the working population the policy holders of the Metropolitan Life Insurance Company constitute. For the September surveys in New York City, it may be that the Metropolitan sample was a better one than the Bureau's semi-pseudo-census sample. But the rapid recovery of business may very well have reduced the number of unemployed in New York City by 60% between February and September. Had the 1909 Census figures been available, we would have had something to check

[2] *Op. cit.*, pp. 413–414.

from, and the depth of the 1914–15 depression could have been better measured. As it is, we do not know what percentage of workers is, or was, "normally" unemployed. Some guessers put it at 5%, others say 9%, while the New York State trade-union "statistics" indicate that on the average about 19% of union men are unemployed continuously.

Despite their lack of completeness, the unemployment statistics for 1915 are of immense value. They do give us a base meridian by which to check subsequent figures. When the new census of unemployment in 1930 is completed, we shall have a new base meridian and, let us hope, the 1915 figures will be superseded by better and more detailed statistics. I fear, however, that many social workers and reformers expect very much more than can possibly come out of the present census of unemployment. This census at its best can give us only an approximation to the numbers and percentages of those "gainfully employed" who are for any cause without jobs or not working at the time of the census enumerators' visits. This census does not even attempt to ascertain how many persons actually seeking work were unable to get jobs. It will not even tell us how many and what percentage of persons "gainfully employed" were actually unemployed in any given week or month of 1930, to say nothing of giving us the number and percentage of workers unemployed week by week, month by month, or even season by season in this one census year.

The value even of an accurate count of the unemployed for a particular month (which no census can give), once in ten years, is slight. Its only use is to serve as a base meridian. Not until figures are published currently each month, giving the numbers and percentages of the unemployed by industries and occupations, shall we have anything that deserves the name of unemployment statistics. Our experience with industrial accident statistics leads me to the conclusion that we never shall get reasonably accurate unemployment statistics until compulsory insurance against unemployment is enacted into law. Several states had so-called compulsory accident reporting laws before they enacted workers' accident compensation laws. Most persons took it for granted that all industrial accidents were being reported in the States with compulsory reporting laws. After the enactment of the workmen's compensation acts the number of accidents reported immediately jumped astonishingly, in some cases by more than 50%. Unemployment is an industrial accident, in fact the only pure industrial accident. We may expect that the difference between reporting physical injuries when no compensation benefits existed as an incentive, and reporting them under the compensation laws, would hold in the case of unemployment. I do not say that we should at once enact a Federal law providing unemployment insurance to every unemployed person. I have merely said that until some system of unemployment insurance is enacted, we can never hope to have complete and dependable statistics of unemployment.

Meanwhile, until the 1930 census is published, the student of unemployment may with confidence use the 1915 unemployment figures for what they are worth in checking and comparing the results of more recent studies. To overworked students, as to unemployed workers, half a loaf is better than no bread!

Recent City Unemployment Surveys

Several surveys of unemployment in particular cities have been made since 1915. Among the best are the series of surveys carried out by F. C. Croxton, Mary L. Mark, and F. E. Croxton in Columbus, Ohio, in the months of September and October each year from 1921 to 1925 inclusive;[3] the survey in Buffalo, made by the Croxtons in November, 1929;[4] and the survey made in Philadelphia in April, 1929, by the attendance officers of the Bureau of Compulsory Education of that city and the Wharton School of Finance and Commerce.[5] The results of the Philadelphia study were analyzed in a study prepared by J. Frederick Dewhurst and Ernest A. Tupper.

Buffalo was included in the 1915 survey. We can compare Philadelphia in 1915 and in 1929; but what the interpretation of the figures should be, no one can say with confidence. Table 2 gives a summary of the findings for 1915 in Cleveland, Toledo, Milwaukee, Philadelphia, and New York City, compared with the findings in Philadelphia and Buffalo in 1929 and Columbus in 1924. The year 1915 started in about 18% below normal and ended very near normal, according to Carl Snyder's index of business activity. The American Telephone and Telegraph index shows 1915 beginning at about minus 19 and ending about plus 14, with a large minus margin. The year 1924 according to Snyder's

TABLE 2. COMPARISON OF UNEMPLOYMENT STATISTICS GATHERED IN DIFFERENT YEARS IN DIFFERENT CITIES

City	Number of Families Canvassed	Per cent of Families with Unemployment	Number of Persons in Families	Number of Wage Earners in Families	Unemployed		Part-time Workers	
					Number	Per Cent	Number	Per Cent
New York, September, 1915 ..	56,539	9.7	235,628	97,741	6,529	6.7	8,176	8.4
Cleveland, April, " ..	16,851	11.6	67,787	24,934	2,348	9.4	3,060	12.3
Toledo, " " ..	7,233	12.8	28,045	10,312	1,102	10.7	1,801	17.5
Milwaukee, " " ..	8,813	9.9	36,346	13,112	1,030	7.9	3,788	28.9
Philadelphia, " " ..	79,058	14.2	346,787	137,244	14,147	10.3	26,907	19.6
Philadelphia, " 1929 ..	31,551	15.6	140,174	58,866	6,110	10.4	.....	....
Buffalo, November, " ..	.....	....	.....	15,164	1,509	10.9	981	6.7
Columbus, " 1924 ..	.....	....	.....	10,834	945	9.5	1,044	11.7

These studies were very carefully planned and seem to have been thoroughly carried out. The results demand very careful study. It is unfortunate that neither Columbus nor

[3] U. S. Bureau of Labor Statistics *Monthly Labor Review*, April, 1922, pp. 14–23; U. S. Bureau of Labor Statistics Bulletin No. 409, *Unemployment in Columbus, Ohio, 1921 to 1925*.

[4] U. S. Bureau of Labor Statistics *Monthly Labor Review*, February, 1930, pp. 25–39; N. Y. Dept. of Labor, *Special Bulletin* No. 163.

[5] U. S. Bureau of Labor Statistics *Monthly Labor Review*, February, 1930, pp. 17–24.

index was about 3% above normal, while, according to the American Telephone and Telegraph index, the year began about 12% above, sank to 13% below, and ended about 10% above normal with an average well below normal. The lack of agreement about prosperity and depression between these two indexes adds to the difficulties of the statistical interpreter. Were we depressed in 1924 or not? How depressed were we in 1915? The

year 1929 was labeled by the President of the National Association of Manufacturers as the year of "profitless prosperity"! The earnings of corporations, however, surpassed all precedents.

The figures in Table 2 should be a source of considerable comfort and satisfaction to the harried hunter of "facts." He can honestly say that they all sing the same song in the same key. Perhaps they should not be so harmonious. It may be that the industries and habits of the several cities are so different, and the economic conditions in 1915, 1924, and 1929 are so unlike, that the statistical stories should be entirely different. I refrain from further criticism because it would be a great pity to spoil this all too rare example of statistical harmony. The greater proportion of part-time work found in 1915 is probably due to the fact that the Bureau's schedules apparently called for the reporting of part time in greater detail than was required by the Croxtons.

Trade-Union Statistics of Unemployment

The unemployment "statistics" compiled from reports by trade unions relate only to union workers and cannot be applied to workers in general. Those who have tried to interpret and make use of the New York, Massachusetts, and American Federation of Labor figures of unemployment have been baffled by their erratic and contradictory character. All of these trade-union "statistics" have been discontinued because of their unreliability and the difficulty in securing reports regularly. Recently, however, the American Federation of Labor has revived its report on unemployment among trade unionists for the entire country, beginning in 1928, and publishes in chart form the percentages of unemployment reported each month in its *Monthly Survey of Business*. The chart in the Survey shows the changing percentages of unemployment, month by month, from January, 1928, down to the latest month published.

The low point, about 9%, in August, both in 1928 and in 1929, seems high for trade-union members in those years. The increase in unemployment since August, 1929, to more than 12% in November, 16% in December, 20% in January, and 22½% in February, seems quite improbable, although it may well be that in certain trades and localities 9 out of 40 workers were out of work in February. The proportion of workers in different trades which are included in these reports is not stated, nor is it stated to what extent seasonality in the building and clothing trades and other seasonal industries is responsible for these large percentages.

While the new American Federation of Labor figures are doubtless a great improvement upon the old crude figures, they still relate only to unemployment among trade unionists as reported by trade-union officials, who often lack training in securing facts and have little exact knowledge of actual conditions and no incentive to report accurately on unemployment. The case is quite different from that of the trade unions of Great Britain, Germany, Norway, Belgium, Holland, and other countries, in which trade-union unemployment benefits constitute a major function of these organizations.

I have never felt justified in using these trade-union percentages of unemployment, not merely because they made no pretense of representing more than the minority of workers organized into unions, but mainly because it is doubtful whether they are truly repre-

sentative of the trade unions. Manipulate them and explain their discrepancies as we may, there remains a substantial doubt as to their dependability, especially in respect to the New York figures. It is, of course, a matter for the personal judgment of each investigator whether he will make use of admittedly defective raw material to construct statistics which at best are quite imperfect approximations, or whether he will reject inaccurate data and construct nothing at all. My personal judgment in this case favors doing nothing rather than doing something with such doubtful materials.

Summary and Conclusions Regarding Unemployment Statistics

The fatal defect in all these unemployment statistics, near statistics, and pseudo statistics is that we do not know exactly what they mean. They leave the guessers still in possession of the field of unemployment "statistics."

Those who are committed to the prosperity doctrine that "fundamental conditions as a whole are sound" will continue to underguess the extent of any business recession and the consequent unemployment and will hold to their convictions that unemployment is a sporadic, temporary phenomenon which always cures itself very quickly as soon as the workers' inflated wages have been properly deflated. They will continue to deprecate the exaggerated statements about the seriousness of unemployment and will consistently oppose any hasty and dangerous "socialistic" action on the part of either industry or government looking toward the guaranteeing of all-the-year-round employment or the establishment of unemployment insurance. They will continue to answer the indictments laid against the present industrial system by stoutly maintaining that God is still in His heaven, all's right with the world. They are still able to believe that the few improvident workers who sometimes really suffer transient inconvenience or distress are liberally taken care of by the established charitable agencies through the time-honored devices of free bread and soup.

On the other hand, those who realize the serious defects and the precariousness of our present-day industrial structure will accept as established fact asseverations like the unverifiable statement attributed to an unnamed government official that, during the stock-market crash in 1929, "unemployment jumped in two weeks from 700,000 to 3,100,000"! This group knows that unemployment is no chance, occasional, and transitory accident, but is a continuous and most deplorable condition incident to the present organization of industry—or rather the lack of it. At irregular intervals, which mark the end of "business cycles," business smashes itself to smithereens, and the unemployment problem flames up with a terrifying menace which calls forth furious guessing and agitated oratory from everybody involved.

Many business men realize that unemployment is the worst, most dangerous, and most inexcusable waste in the modern economic organization and they are ready to apply any reasonable measures to stabilize business and insure steady jobs to every worker and every employer. Probably the "reasonable measures" which would be acceptable to business men generally would be quite ineffective to cure the evils so obvious to the student of our economic organization. Reason, however, has little to do in determining and governing our actions and in the evolution of institutions. The present

industrial organization seems to many quite unreasonable in its structure and functioning, and it may well be that unreasonable measures rather than reasonable measures are needed to set it right.

There seems to be a widely accepted and, until recently at least, an increasingly prevalent notion among manufacturers and merchants that man is primarily a purchasing animal. Man may be made to mourn, as Bobbie Burns said, but the stock and commodity merchants would first make him buy so that he may have something tangible to mourn about. The Gospel of Spending seems to be accepted by many as the newest Dispensation of the new Religion of Prosperity. Men should be employed, so that they may buy more radios, autos, can openers, fur coats, purple ties, and ten thousand other things that are manufactured and therefore must be sold to "ultimate consumers," whether the "ultimate consumers" want them and are able to pay for them or not. Wages should be high so that the workers may Eatmore ice cream, Smokemore cigarettes, Usemore useless jewelry, Wearmore underwear, Burnmore Klinker Koal, Breakmore unbreakable crockery, *etc.*, to the end that prices may be maintained, markets sustained and continuous prosperity continued. It seems that the chief end of man is to spend—not in niggardly fashion but with bright abandon. It is not sufficient merely to spend all one has. To be a true-blue booster for continuous and ever-increasing prosperity one must lay, not only all that he has but all that he hopes to have, upon the altar of Prosperity. The installment selling concerns have given expert assistance in helping many to do this very thing and more also.

I have, perhaps, given an exaggerated and somewhat grotesque picture of our unorganized business organization. I am impressed with the haphazardness of the whole thing, the lack of a considered, concerted plan to eliminate or at least to mitigate the terrifying ups and downs of business and employment. Oftentimes the effects of unemployment and low wages upon the individual workers' bodies and souls seem to be forgotten or shoved aside as of little importance.

Until we establish reasonably accurate current statistics of unemployment, the ancient dispute will continue to rage with increasing fury as to whether there is any unemployment worth talking about, and as to what, if anything, should be done to relieve or to prevent it.

This survey of unemployment surveys in the United States bears a certain family resemblance to the classic treatise on frogs and snakes in Ireland. Since we have no unemployment figures that enable us to build up dependable indexes of unemployment by weeks, by months, or even by years, we are forced to make use of employment figures in attempting to get at the extent of unemployment.

II. Employment Statistics

Although unemployment statistics for the United States as a whole or for any of its political subdivisions are almost non-existent, for 15 years the United States Bureau of Labor Statistics has been publishing statistics of numbers employed and amount of pay roll in selected establishments in certain industries. In New York State these statistics were begun even earlier. There are now three chief sources for country-wide employment and pay-roll statistics in the United States, namely,

the United States Bureau of Labor Statistics, the Federal Reserve Board, and the National Industrial Conference Board. The best employment and pay-roll indexes are published by *The Annalist*, which refines the indexes of the Federal Reserve Board by correcting for monthly variations.

United States Bureau of Labor Statistics

The United States Bureau of Labor Statistics figures were at first limited to some 258 establishments in only 5 manufacturing industries, but they have been steadily expanded and improved until today they represent some 34,857 establishments normally employing more than 5,000,000 workers distributed among 8 great industrial groups, namely, manufacturing, coal mining, metalliferous mining, quarrying, public utilities, trade, hotels, and canning and preserving. The manufacturing group is subdivided into 12 classes with 54 industrial sub-groups, including 12,321 establishments employing between 3,200,000 and 3,900,000 workers.

These statistics of employment in selected industries are very valuable as showing changes in the establishments included, but they do not shed much light on the extent of unemployment. In fact these statistics may be dangerously misleading if used unskilfully, ignorantly, or unscrupulously, either to exaggerate or to minimize the extent of unemployment.

When I first established the Bureau's employment statistics in 1915, I fully realized that they might be misinterpreted, and especial care was taken to point out that they were statistics of *employment* and not of *unemployment*. Notwithstanding my explanations and warnings, even reputable statisticians stated that these employment statistics could be plotted in a curve, and the curve could then be turned upside down in order to get a curve of unemployment! Of course such a proposal is absurd, as I have repeatedly pointed out, but its absurdity was not so apparent in 1915 as it became in 1921 and subsequently. But although the impropriety of using these employment statistics as negative unemployment statistics has been demonstrated over and over again, many persons who wish to give "statistical proof" of the extent of unemployment persist in misinterpreting a 10% drop in *employment* in the reporting plants in the selected industries as a 10% increase in *unemployment*.

Even as statistics of employment in all industries in the United States, these figures and indexes are distinctly limited and need to be handled with caution and common sense. Fluctuations in numbers employed, amount of pay roll, and per-capita earnings in industrial establishments cannot be accurately measured by the method of sampling of which the United States Bureau of Labor Statistics is obliged to make use. The Bureau has had to work under great handicaps but it has, in spite of this, turned out and is still turning out statistics in the field of labor which command the highest praise. The Bureau has used the only possible sources available to it for gathering these statistics, namely, reports from plants covered by its wages and hours of labor studies, or reports from State Departments of Labor which gather the information. There is no question about the reliability of the figures reported in these ways. The unreliability comes from the non-representative character of the plants included in the sample, and this source of error is beyond the power of the

Bureau to remedy in its monthly reports, at least in the present state of development of the art and science of "fact finding."

The great scope and the representative character of the employment and pay-roll statistics gathered and compiled by the Bureau are shown in Table 3.

TABLE 3. SUMMARY OF EMPLOYMENT AND PAY-ROLL TOTALS, JANUARY, 1930, AND DECEMBER, 1929

Industrial Group	Establishments	Employment		Per Cent of Change	Pay Roll in One Week		Per Cent of Change
		December, 1929	January, 1930		December, 1929	January, 1930	
1. Manufacturing	12,321	3,239,353	3,197,153	− 1.8	$85,780,819	$82,113,074	− 4.8
2. Coal mining	1,449	336,338	333,081	− 1.0	10,528,091	9,069,079	−13.9
Anthracite	*162*	*121,391*	*115,710*	*− 4.7*	*4,785,556*	*3,690,494*	*−22.9*
Bituminous	*1,287*	*214,947*	*217,371*	*+ 1.1*	*5,742,535*	*5,378,585*	*− 6.3*
3. Metalliferous mining	350	61,546	59,837	− 2.8	1,876,333	1,745,910	− 7.0
4. Quarrying and non-metallic mining	586	31,258	27,591	−11.7	765,895	645,047	−15.8
5. Public utilities	9,657	721,781	711,996	− 1.4	21,773,012	21,308,623	− 2.1
6. Trade	8,295	354,885	289,855	−18.3	8,602,270	7,353,547	−14.5
Wholesale	*1,757*	*60,571*	*59,052*	*− 2.5*	*1,887,832*	*1,802,907*	*− 4.5*
Retail	*6,538*	*294,314*	*230,803*	*−21.6*	*6,714,438*	*5,550,640*	*−17.3*
7. Hotels	1,796	150,949	155,209	+ 2.8	2,586,835	2,624,153	+ 1.4
8. Canning and preserving	403	23,862	17,947	−24.8	435,903	345,749	−20.7
Total	34,857	4,919,972	4,792,669	− 2.6	132,349,158	125,205,182	− 5.4

Taken from the *Monthly Labor Review* of the Bureau of Labor Statistics, March, 1930, p. 149.

There are two major sources of error, due to the method of sampling used in gathering the raw materials for these statistics. (1) Only the larger establishments can be included. The vast number of small plants cannot be included because they cannot be made to report; they have no records, or very defective records; and, even if they could be made to report fully, the expense of checking, correcting and tabulating would be prohibitive. (2) No new industrial undertakings are included because it takes years for a new industry to develop to a size which would warrant its inclusion by the Bureau, even though individual plants might be large enough to be caught in the Bureau's dragnet. These errors which give a downward bias to the index of employment could be almost wholly eliminated by using the biennial employment figures collected by the census to correct the Bureau's figures.

The errors inherent in the gathering of the employment statistics are sometimes magnified by those who attempt to make these figures reveal the numbers unemployed. First, the index number of employment in a given year is multiplied by the total number employed, as reported by the Census in the base year of reckoning, to obtain what is assumed to be the total number employed in factories in the given year. The difference between this computed number of all workers and the total number employed in the base year, is assumed to show the number who have become unemployed in the interval. An estimate is next made of the numbers of young persons who have reached working age since

the base year, and these are added to the number of the "unemployed," arrived at by the method described above, to obtain the total number of unemployed because of discharge or because of failure to obtain work since the base year. The so-called "unemployment" figures thus obtained would seem to be sufficiently erroneous, but they are made grotesquely so by adding to them the guess at the number unemployed in the base year, so as to get the grand total of the unemployed in the given year.

Another cause of error is involved in the method of constructing the indexes. Since the number of establishments reporting varies somewhat from month to month, it has been necessary to construct month-to-month chain links. These links are joined together into a chain index with 1926 = 100 as the present base. Chain indexes are deceptive statistical measures, but probably their effect in this case is to bring the Bureau's employment index nearer to that of the Federal Reserve Board than would otherwise be the case.

When these employment and pay-roll statistics were inaugurated, I did not think it possible to indicate the total employment in the United States even in those industries included in the Bureau's reports. Now that the Bureau of Labor Statistics has so greatly expanded the scope of its reports and the Bureau of the Census is making a census of employment and pay rolls by industries every two years, it is obvious that the Bureau of Labor Statistics should make use of these more complete figures, for the purpose of making the employment and pay-roll indexes more representative of what is taking place in the different industrial sub-groups and in industry as a whole.

The Federal Reserve Board Indexes

The Federal Reserve Board has made use of the Census figures to correct and improve its indexes of employment and pay roll in manufacturing industries. The Board's indexes are, therefore, undoubtedly more truly representative of conditions in manufacturing than are the Bureau's.[6] With commendable frankness, the Board points out the defects in its former index, which recorded a decline in factory employment from 1923 to 1927 of 12%, or more than 1,000,000 workers, while the complete returns from the Census showed a decline of only 5%, or about 425,000 workers.[7]

The biennial employment figures of the Census may be open to criticism for lack of completeness, and the classification of industries may be questioned, but the Census figures for employment are certainly much more accurate than figures reported by "representative" plants selected from the larger and long-established companies covered by the Bureau of Labor Statistics studies. But the Census figures at their best are still only employment figures. They show with acceptable accuracy the changes in employment during each biennium. They do not tell us how many persons seeking employment were unable to find jobs. The normal increase in the population of course adds to the number seeking employment. Is the ratio of actual and potential workers to the total population a declining or an increasing ratio? We can guess at the answer, but we do not know. Neither the Bureau nor

[6] Berridge, W. A., "Flaws in Federal Employment Data: Changes Needed For Guidance of Business," *The Annalist*, Feb. 21, 1930, pp. 451 ff. "Index of Employment in Manufacturing Industries," *Federal Reserve Bulletin*, Dec., 1923, pp. 1272–1279; May, 1925, pp. 324–330; Nov., 1929, pp. 706–716.

[7] *Federal Reserve Bulletin*, Nov., 1929, p. 707.

the Federal Reserve Board makes any correction for seasonal variations in employment. *The Annalist* has computed an index for the average seasonal variations over the nine-year period September, 1921, to September, 1929, and divides this seasonal index into the Reserve Board's index to obtain a refined index devoid of seasonal fluctuations. *The Annalist* index is much the most meaningful index, since it tells us at a glance that the increase in employment in February of this year, as shown by the other employment indexes, did not denote a recovery of business but the reverse, since the increase was less than the average seasonal increase.

In Chart I the indexes of factory employment by the United States Bureau of Labor Statistics, the Federal Reserve Board, and the National Industrial Conference Board are shown. *The Annalist* indexes, although unquestionably more accurate for the monthly figures, did not differ greatly from the Federal Reserve Board's indexes and were therefore not included in this comparison.

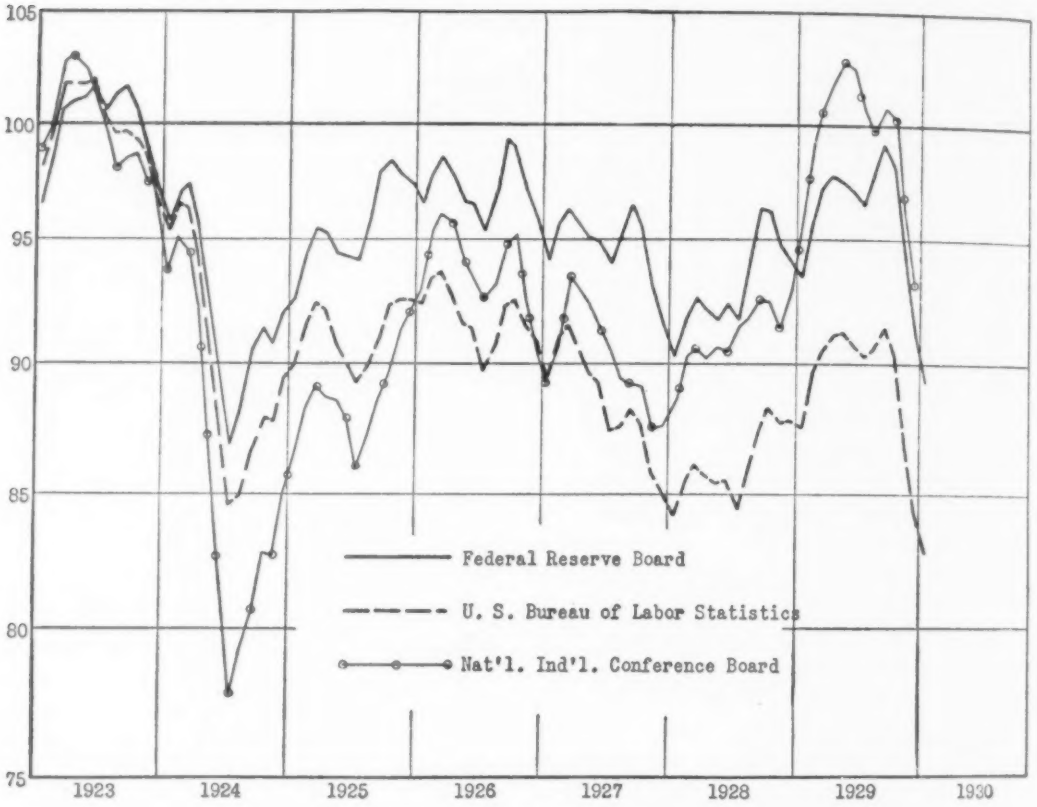


CHART I. COMPARISON OF EMPLOYMENT INDEXES
(1923 = 100)

The decline in factory employment in 1929 compared with 1923, as recorded by the Bureau's index is 10.4%, while the Board's index shows only 3.6%. Applying these percentages to an estimated 8,800,000 of factory employees in 1923, a decrease of 915,000

workers is indicated by the Bureau's index, and only 317,000 by the Board's index. The employment index numbers for January, 1930, are: for the Bureau, 82.9; for the Board, 89.3; indicating that 1,500,000 and 942,000 workers, respectively, had been displaced from manufacturing plants since 1923.

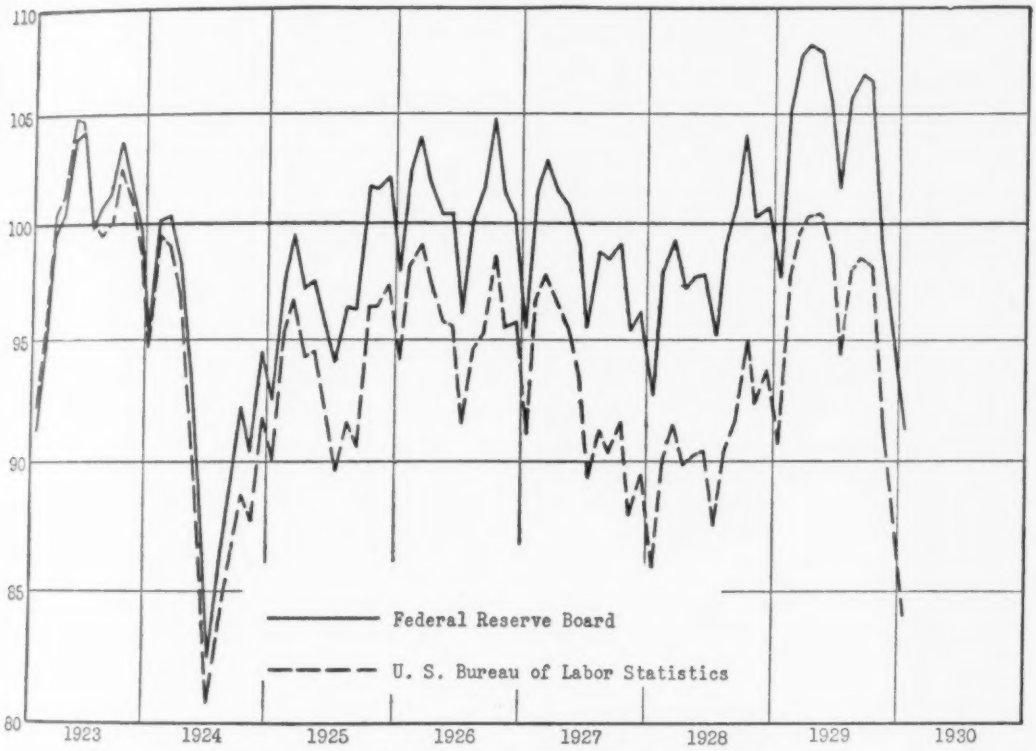


CHART II. COMPARISON OF PAY-ROLL INDEXES
(1923 = 100)

The National Industrial Conference Board's index is consistently much higher than either of the other indexes throughout the year 1929, although it had been consistently lower than the Board's index in every month from January, 1924, to December, 1928.[8] Its erratic gyrations may be due to differences in definitions and methods of reporting, or to the much smaller number of plants and workers covered. The Conference Board presents figures for only about 1,600 establishments with about 771,000 workers in 1927. Naturally an index made from such relatively limited data cannot be accepted as equal in value to either of the other indexes.

[8] The National Industrial Conference Board index numbers were kindly furnished me by Dr. Roland P. Falkner, Economist of the Board, although some of them have never been published.

Conclusion

The usefulness of index numbers of employment, wages, hours, earnings, and cost of living computed for the whole United States, or even for geographical divisions, may be questioned. An American index of employment may

be compared to an American index of temperature or of rainfall. The Iowa farmer is not interested in the index number of rainfall computed by averaging the rainfall in the great American desert where there is no rain and the rainfall on the coast of Alaska where there is nothing but rain. The Iowa farmer wants to know how the rainfall this present week, month, and season in his section of Iowa compares with the "normal" rainfall in that region. More general indexes are useless to him. Likewise an index number of American temperature computed by averaging the sizzling heat of Death Valley and the congealing cold of Nome would afford little benefit to the New Yorker or Bostonian.

Indexes relating to labor conditions for the whole United States, however, do have value to students of general business conditions and of the distribution of income and wealth. Such statistics are not of much value, however, to workers, business men, or bankers who are trying to meet local industrial conditions. The bankers and cotton-mill employers and employees of New England can get very little good from country-wide statistics upon employment, wages, cost of living, *etc.* What they need are statistics representing not vast averages for the country as a whole or even for geographical divisions, but local statistics for particular cities or localities. It is to be hoped that our statistical factories will be able in the future to give out more localized statistics.

What is more important, we need to make our employment and pay-roll statistics as accurate as possible; and most important of all, we need to have available promptly all statistics relating to employment, earnings, and cost of living each month, or oftener during industrial emergencies, to set up real, continuous, and dependable statistics of unemployment.

FINANCIAL ASPECTS OF MINING ENTERPRISES

By LUCIUS W. MAYER

OF the principal minerals, the United States is the world's most important producer of copper, iron, lead, zinc, aluminum, coal, petroleum, sulphur and phosphates, and is the most important consumer of practically all these materials. Fifty-eight per cent of the freight handled by the railroads of the United States is in the form of raw mineral materials. The United Kingdom predominates in the production of chromium, asbestos, also tin and nickel, of which latter two there is practically no production in this country. The intensive search for tin and nickel during the War, when the need for these two metals was most urgent, was fruitless, and this regardless of price; so the United States is not likely ever to be a substantial producer of these two metals. Italy predominates in mercury and Germany in potash; Bolivia stands out in the production of tin, China in antimony, Russia as to platinum. Certain of the nations, of course, are significant producers of the aforementioned metals, but the predominance of the United States in so many items readily accounts for the part it plays in the world's commerce.

There are other important though secondary mineral products, such as nitrate, graphite, magnesite, mica, tungsten, *etc.*, which enter into the international balance-sheet, no one country being in a position to supply its own needs of all the metals. The very irregularity of the distribution of the world's mineral supply accounts for the great international movement and also all too frequently accounts for dissension among the nations.

The fact that no important mines have been discovered in recent years in the United States, and the great rate of production from existing ones, place the United States in the position of witnessing a changing metal map in certain directions; in the case of copper, for example, the oncoming new Rhodesian and Canadian production will certainly affect the balance-sheet. The fact that the United States produces nearly 70% of the world's petroleum may seem something to be proud of, but the present rate of production is one not unattended by misgiving on the part of many farseeing economists. These are features which security investors must take into account when considering the possible life of any particular company, the principal asset of which is raw material.

The average man knows that mining is a profitable business, but there are many misconceptions as to how he individually can profit. Most of us do not wish to be troubled with searching for ore and only a few know how to search for it. By "search" we have in mind not only actually going into the hills, but also putting up money intelligently to finance the search and, what is equally important, directing the exploration, even if it is from a glass-top desk. What the average man prefers to do is what he is virtually limited to doing: to purchase shares in mines. This is a comparatively simple method, which puts the responsibility directly upon those who are believed

to have the specialized knowledge necessary.

Much has been said regarding the steps which one should take in determining what shares might be purchased with reasonable safety and how decision should be made as to what would be a fair price to pay. This is worth repeating. Various preliminary stages in the development of a mining prospect should have been experienced before the public should interest itself at all. The more important mining interests do not present the opportunity for public participation in mining projects until the early or most speculative stage has been completed, and wisely assume this risk themselves. Even they, however, rarely undertake the exploration of raw prospects. It might be suggested that this policy precludes rapid development of many promising mining prospects. This may be true to a certain extent, but there are always certain local persons familiar with mining who are qualified to enter upon the risks of opening up virgin territory and who eventually, if developments are favorable, bring the proposition to the money centers. The larger interests identified with the mining industry are then sometimes willing to risk a certain part of their funds for exploration work, and since they are in a position intelligently to diversify these risks, it is much more prudent for the average man to invest in securities of such organizations than it is for him to buy shares of individual and relatively small mining enterprises, especially where these companies own but one property.

Financing a Potential Mine

The manner in which mining properties are financed, of course, depends upon the stage of their development. The cost of work on raw prospects is generally met locally and, regardless of what Mark Twain may have said about "the hole in the ground," without this primary effort and enthusiasm many a great mine would not be in existence today. True, there is an immense amount of misdirected effort during the early life of mining undertakings the world over, because frequently the original ore discoveries are made by men who have an insufficient conception of the conditions necessary to make a mine. There are innumerable workings scattered all through the mining country, which from the start were not justified in the light of geological conditions, and which any one versed in the business would readily have recognized as unfriendly to the deposition of ore. Not infrequently, however, favorable conditions at the surface evidence themselves, where there is every justification for doing a certain amount of initial work. Despite honesty of purpose and intelligent procedure, this work may result negatively, because such values as are found are uncommercial at the time or because no values at all are disclosed. Then, too, material of a certain grade may be commercial under certain geographical and topographical conditions, while the same grade of ore could not yield profitably in another locality. Where, for example, cheap power is not available or where skilled labor is scarce or transportation far distant, an ore body may be developed which is physically exactly similar to another deposit favorably located as to these considerations. The former, however, would require such a large outlay for capital expenditure that to equip it for extraction would be an unsound investment. Sometimes deposits are the scene of large and legitimate

expenditure for development, to ascertain their magnitude—only to ascertain ultimately that there is insufficient ore, even though the figure may appear very large. Similarly there are ore deposits of a nature for which no known means of metallurgical procedure exists at the time. This was the case with the major part of the ore of the Chile Copper Company in its very early stages of development. If an original method had not been devised to treat that ore—a method which was devised only after quite an expenditure had been made for exploration work—the securities of that company would have only a potential value today, instead of recently having had a total value on the market of over $400,000,000.

There are known deposits of ore—development of which was approached in the same manner as Chile Copper—which have never been equipped with machinery because of the limited size of the deposits. While the securities of such companies may be standing at a very low figure at this time, the incoming of transportation, improvement in metallurgical art and the development of tonnage not previously disclosed or expected, may in the future create a reversal of affairs of those companies, and sound enterprises may be developed therefrom.

If, for example, Utah Copper, the premier copper mine in the United States, had been known to have a tonnage of ore of only the grade that is being mined there today, that property would never have been equipped at the time it was, because ore of the grade now being treated was not commercial at the time, and no banker would have undertaken the financing of that huge enterprise. The same applies to Nevada Consolidated, Ray, Chino, Inspiration and other mines, though they might have been operated on a relatively small scale to work such of the better grades of ore as existed.

After a certain amount of work has been done by the prospector, supported by local funds, the time usually arrives when these resources become inadequate. If the work promises well, it is a matter of only a short time when the mining press takes cognizance of it. This press, in so far as the local papers are concerned, nearly always exaggerates conditions, and, of course, on the favorable side. Nevertheless, there are discerning persons who do possess the ability to analyze even a flamboyant statement, and then too there are usually a few local people in every community, even though it be small, who because of their ability enjoy the confidence of certain persons in the money centers, with the result that competent engineers eventually drift into the field, representing companies or individuals who make it their business to keep informed on developments in the various districts in the mining country. If companies have already been formed locally and if the shares have a certain amount of distribution, a difficult situation presents itself in so far as sound and permanent financing is concerned; at least such a situation is more difficult than where the operation has been carried forward by local individuals in partnership and to the point where the underground conditions are sufficiently exposed to warrant capitalists in interesting themselves in such business.

The local exchanges, such as San Francisco, Los Angeles, Spokane, Salt Lake City, *etc.*, at times have a considerable market in mining shares. If the shares of the prospects are

traded in on these exchanges during the early stages, they usually go through a period when they are so over-priced, due either to incompetence of the local press or to the overzealousness of the large shareholders, that no opportunity develops to permit the meeting of their minds with those of the capitalists. Thus, the sound development of these properties is frequently deferred for years, or at least until such time as the owners attain a proper perspective and a correct realization of the value which will induce the mining capitalist to take the risk which he deems to exist. This accounts very largely for the long period which usually elapses before a mine passes from the discovery stage to the point of actual profitable output and dividends.

There have been instances, it should be said, when under very favorable conditions deposits have been found to be outcropping, of such a value that there has been a profit in the ore almost from the inception, so that such enterprises finance themselves. This was true of the early development of certain sections of Canada, such as the silver mines of Cobalt, and of the gold mines of Cripple Creek, Colorado, and Goldfield, Nevada, and a few other localities. Such a result is definitely the exception, however.

Types of Securities Favored by Investors

The most optimistic engineers (if a good one who is optimistic by nature can be found) will not contradict the statement that large mining enterprises are generally attended with risks not usually inherent in other industries. Big as well as small mines, located in very mountainous countries where climatic conditions are severe, meet with fortuitous conditions which sometimes interfere with regular operations for considerable periods. Other important mines are sometimes located in countries where unfriendly political conditions exist or in sections where labor is disturbed or recalcitrant. Conditions may also be cited which tend to bring about the unexpected rather more frequently than the anticipated. There is, therefore, a speculative aspect which, taking the industry as a whole, justifies one in expecting from it a greater return than from an industry in which risks are diversified and in which misfortune in one particular direction would not necessarily cripple the entire business for any length of time.

In the light of this, preferred shares or straight bonds have never been popular with the American public having to do with mines. Strangely enough, only last year the Anglo-American Corporation, one of the most important English holding companies and mining investment trusts with strong American affiliations, divided its common-stock capital, consisting of £1 shares, into shares of 10s preference stock, bearing a 6% dividend rate, and a 10s common share. The remarks of the chairman of the meeting on the subject of the reorganization of capital are interesting, since they occurred at the very time when we in this country were converting bonds and preferred shares into common stock. His remarks follow:

"I will deal with the proposal to reorganize the capital by dividing the existing shares into 6% cumulative preference stock and new ordinary shares of 10s denomination. By converting the whole of the present capital in this way, it will be recognised that every shareholder, be his holding large or small, is treated alike—if the proposals are adopted the holdings of preference stock and new ordinary shares which a shareholder will receive in exchange for his present £1 shares will represent

precisely the same proportion of the Corporation's assets and profits as does his existing holding, whilst his voting power remains unchanged. To a shareholder who retains his whole interest, however, there is this difference, *viz.*, that he will receive a portion of his income at the half-year, and this will meet in part the wishes which have on several occasions been expressed by shareholders. But your Directors feel that the principal advantage of the scheme is that by providing two classes of security, each with its particular features, your Corporation will in future appeal to a wider circle of investors than hitherto. The importance of this aspect cannot be exaggerated in the case of a Company like yours, whose activities, as shown by its record, are continually expanding. The security of the preference stock, both as regards capital and dividend, is quite exceptional, and this fact, considered in conjunction with the substantial rate of return, makes the stock an investment security of outstanding merit, the more so since, unlike a loan or debenture, its life is not limited. As for the new 10s shares, whilst they still are ordinary shares, their dividend prospects are obviously greatly improved. To summarise the position, no shareholder or section of shareholders receives preferential treatment, whilst the undoubted benefits which attach to the scheme can be enjoyed to the degree to which each of them appeals to the individual shareholder."

While the preference share referred to is as safe as any mining security with properties in Africa can be, still to us on this side of the Atlantic it would seem more logical to invest, for the return mentioned, in certain foreign government bonds or American domestic convertible debentures or preferred shares. However, there seems to be a circle of investors—probably many in the provinces or in Africa itself—who, respecting this company highly and being familiar with the details of its make-up, choose to hold the preferred security with limited return and without the opportunity of gaining fully through the vicissitudes of a business not bereft of speculative features. It is probably a fair assumption that many American holders of Anglo-American Corporation shares sold the preferred shares to which they were entitled and purchased common stock with the proceeds.

Important Mining and Metallurgical Companies

The two most important American mining companies are the Anaconda Copper Company and the Kennecott Copper Corporation, both of which are international in scope. The life of their operations is certain to be very protracted. Similarly, the mines of the St. Joseph Lead Company, International Nickel Company, Aluminum Company of America, Anglo-Chilean Consolidated Nitrate Corporation and Consolidated Mining and Smelting Company of Canada, an important subsidiary of the Canadian Pacific Railroad, are of a type where the ore occurrence is of a nature to permit the estimation of ore reserves, with confidence that long life is assured. The same may be said of the Texas Gulf Sulphur Company and the New Jersey Zinc Company. The American Smelting and Refining Company, the United States Smelting, Refining and Mining Company and the American Metal Company are important mine operators, but their principal business is handling the products of mines for others on a custom basis.

Aside from its interests in this country, Anaconda, as well as Kennecott, owns important deposits in South America. The Anaconda is a large producer of all the major non-ferrous metals, whereas the Kennecott is essentially a holding company for some of the largest copper mines in the

United States as well as for one of the world's great copper mines in Chile. Both of these companies are not only producers but also fabricators of metal products, these being integrated operations. The question of developing new ore in the mining properties mentioned is, relatively, of no great import at this time, because of the size of the ore reserves which they now have developed. This is in contrast with properties of other companies, such as the mines of the Calumet and Arizona Mining Company at Bisbee, Arizona, the Cerro de Pasco Copper Corporation in Peru and the Greene Cananea Copper Company, where the ore occurs in less regular masses and where conditions do not permit of economic development far in advance of extraction. Similarly, mines of the type of the Hollinger gold mine and McIntyre Porcupine, both in Canada, or Park Utah, a lead property in Utah, may continue to operate for very many years, but the accurate estimation of a long life at any given time is essentially difficult. While the history of the mineral and geological conditions may give every confidence for a long-term prediction, it is impossible long in advance to give figures on tonnage with definite assurance, and so the valuation of the securities is more uncertain. Sometimes there is enough mystery about this sort of thing to lend a color which greatly appeals to prospective shareholders, so that a security of such a mine may sell on a higher basis than one where there is much less certainty about the destiny of the property for a period of years ahead. Really only those who live in close contact with properties of this type are fully competent, from experience, to weigh the various conditions and evaluate them.

The New Copper Field in Africa

An experience, which is interesting because it is recent and because of the great importance of the development, is the discovery of the previously mentioned new copper field in Rhodesia, South Central Africa. The result of this development is that Great Britain, hitherto dependent upon the outside world for its copper supply, now finds itself politically dominant over an area which will provide copper for all its requirements, and in a few years will be exporting this material to foreign countries.

It has been known for some years that copper existed in Central Africa, the Katanga operation of the Belgians in the Congo being one of the outstanding developments of the past twenty years. However, that there were commercial possibilities almost at the door of Katanga's operations, but south of it, and that there was a basis for the Rhodesian enterprise, it now appears were both only vaguely realized. These Rhodesian deposits, fortunately, gave evidences at the surface, and it remained for certain Americans to gather up important holdings in that territory and call the world's attention to their importance. The English had been there too—lieutenants of Cecil Rhodes, well within living memory—but the English public was more engrossed with the gold properties of South Africa, in connection with which original engineering work the Americans were also so strongly identified. Copper held little interest for the British except for trading in "futures" in London, where the world's market in this metal was centered until recently. The English did make an effort, with the Bwana M'Kubwa Mine in Northern Rhodesia, which company was registered as re-

cently as 1922, but they worked upon an ore deposit of indifferent merit from the standpoint both of size and composition. Certain Americans took an interest in this property, but they never played a dominant part in its promotion, and the Bwana M'Kubwa securities during this stage declined as the limitations of this business became evident.

Meantime, outcrops previously mentioned but of a different type from the outcrops of Bwana M'Kubwa were the scene of vigorous investigation on the part of certain Americans, and while the English were in a funk about the work that they had undertaken, the Roan Antelope Copper Mines, Limited, was registered in 1927 to acquire property which is now the basis of that large construction program. The ore here, however, was of a different nature from that of the Bwana M'Kubwa operation described and of a nature readily recognized as being susceptible of profitable exploitation. The adversities of the Bwana M'Kubwa Company were meantime alleviated by the discovery on their ground of another deposit similar to that of Roan Antelope, with the result that the entire field is the scene at this time of great activity, and several of our most important mining corporations in New York are largely interested. About twenty-five companies are now active there.

Within a period of about two years plans have been laid and partly executed, looking to the production of an amount of copper which is likely within ten years to equal half the present total production of the United States, and the securities of four of these companies are selling on the market today for about $180,000,000.[1]

[1] Roan Antelope—the shares of which are traded in on the New York Curb as well as in London—has had two issues of stock on the New York market, underwritten by important New York houses. It is reported in London that the financing of an existing English Company known as the Rhodesian Selection Trust, also American-controlled, will probably soon make its appearance in New York. The issued capital of this company enjoys a market value amounting to $45,000,000. The Bwana M'Kubwa shares—English-controlled, but with substantial American interest on the part of the American Metal Company, Newmont Corporation, Mayflower Associates, International Mining Investment Trust and others—are also dealt in on the New York Curb.

Valuation of Mining Securities

The valuation of mining securities is sometimes relatively simple, particularly where development has been carried forward on such a scale as to render it practically certain that the mine will yield a definite tonnage within a particular time. The question as to what market price to use for the product, in order to figure profit over that period, however, is a question always attended by conjecture. Due to great improvement in the metallurgical arts, the world's metals are not costing much more to produce today than formerly, despite the fact that wages and materials are considerably higher in price. In valuing a deposit of ore, one must, of course, assume that the deposit will yield a certain minimum amount of metal, and the figure used for extraction is naturally based upon the status of the art at that time. Such great strides have been made in the past score of years, however, that it is doubtful, in the case of many of the metals, if much greater metallurgical extractions can be accomplished. Certain it is, of course, that there remains less room for improvement than formerly. Considerable scope remains, however, for even greater efficiency in the handling of ore underground and in process, which can bring about a still further lowering in cost of production. Likewise, in

other allied industries, improvements can bring about a lowering of cost of equipment which will mean a decrease in capital expense. All of these items are tantamount to making it possible either to realize a larger monetary return on a given grade of ore or to handle still lower grades of ore with equal profit. It is this sequence which accounts for the fact that the ore reserves of quite a number of mines are greater now than they were years ago, rock formerly considered non-commercial now being the basis of the enterprises.

In arriving at the price to be used for a commodity, in order to make a valuation of a property and thus determine a fair price for its securities, it becomes necessary to consult statistical records. Only in that way can one who wishes to know what has happened in the past hope to secure some basis for judging future development. Many, however, have not been relying so much these days on history as on imagination, and while those who have good imaginations tempered by sound judgment will no doubt go down into history, there are those who are prone to throw history into the discard and who, relying entirely on what they call "the new order of things," will pass out of history. It is true, though, that conditions are so changeable that to expect exact repetition of past performance is also sure to mislead one. Demand and supply at any given time is the most reasonable guide.

The objection to a statistical study seems to be that it takes too long to find out whether or not the basis arrived at, and the conclusions derived, are right or wrong; in the meantime, the changes of fortune are sometimes very disturbing. If, for example, one figures the price of a commodity on the average over a certain period of years and makes a valuation of the security on that basis, that does not preclude a severe drop in the price of that commodity very shortly after the calculation has been made. Then, too, a range of price may continue for a considerable period materially lower than the average price predicted upon the basis of statistical data. Of course the conditions work both ways, but it seems that somehow most people are more sold out before an unexpected rise than before an unexpected recession. Nevertheless, the best that can be done is to use a figure for a commodity that is not out of line with what is considered normal, and then at each juncture, when a calculation is in process, secure the opinion of those considered to have the best commercial judgment.

The anticipation of shortages is usually erroneous. An example of this is the years of prophecy in the oil industry that reserves were being alarmingly depleted. Somehow nature takes care of these situations, and if there is to be a quarrel on the part of anybody in the oil industry, it is with Dame Nature and the newly developed sciences for oil finding.

Having arrived at a price to use for the commodity, we usually feel that if a security is earning, after taxes, depletion and numerous other lesser charges, approximately 10% of what it is selling for, it is reasonably priced, provided the property has known or reasonably assured ore developed sufficiently to continue that rate of earnings for approximately twenty years. There are some mining properties where the ore occurrence is of such a nature that years of supply of ore can not be developed in advance; either because it would be impossible to keep the

workings open and consequently this work would be a total loss afterwards, or else because the ore deposits are so irregular, even though faithful in repetition, that development long in advance is impractical.

Mining Share Markets and Public Information

On frequent occasions mining men receive queries attended with enthusiasm bearing upon some particular mining company which appears to have large cash resources—several million dollars on call; earnings of a substantial nature according to a previous annual report and recent literature; a dividend return in all respects gratifying, and current assets substantially in excess of liabilities. The conditions surrounding this company in respect to its ore reserves, however, may be such that, not alone are these reserves inadequate to return the principal with a fair rate of interest, but the cash resources may have been built up because of a temporary abnormal price of the metal, and the ore reserves may be of a grade which would yield little or no profit with a normal price for the commodity which the mine produces.

If one can not resist the urge to purchase shares of an individual mine, one can do nothing more reasonable than to confine oneself to a large mine, the product of which is derived from a low-grade ore, occurring either in large masses or in very persistent veins of substantial width. This, because the history of these properties on the whole has involved a consistent replacement of new ore for that which has been mined out. A further feature is that the advance in mining and metallurgical science brings about constant improvements, making it possible profitably to mine lower and lower grade ores, which brings into the commercial class rock which previously was not considered an asset.

Due, no doubt, to modern means of transportation, the United States has not in recent years been a fruitful field in the search for new mines, for instances have been rare during the past fifteen years when new mines of consequence have been discovered. The fields of greatest promise in the world today are Africa and Canada and certain parts of Australia. Russia and Siberia are very important but they are necessarily omitted because of political considerations.

The temptation of putting one's money into the shares of a mining company which is not supported by substantial financial affiliation should be resisted. Merely because this affiliation is substantial, however, is, in itself, not quite sufficient, because the banking house may have every qualification except that it may know little about the mining industry. It is desirable that the security be fostered by interests affiliated with the mining business or experienced in the issue of mining securities.

As previously pointed out, the United States predominates in the production of practically every important metal, and it is this situation that accounts for the fact that so many mining securities are being dealt in here. Mining markets in London, however, are of even larger scope than those which we have here, with a larger public participation in mining shares in London than in New York. This probably has come about despite the fact that the British Isles are not a great influence from the standpoint of metal production, probably because English financial houses take the public more into their confidence than is the case

here—a practice which may be readily observed by perusing the English financial newspapers. This policy has created a large class of people who write intelligently about mining affairs, and the opportunity for the average investor in London to apprise himself of the progress of the company in which he is interested is very much greater than in New York. If an English mining share has a sudden significant rise or fall, and if it later develops that the information which caused it was delayed in submission to the public, no calm attitude of tolerance is observed, for protest is immediately registered.

At this writing, development of the great new copper field in Northern Rhodesia is taking place. Shares of some of these companies are quite extensively held in the United States, and a market in New York for them now exists. Almost daily the London press gives the result of the development work in detail for the week, for one or another of these companies, pointing out the importance or negativeness of such development when such comment appears appropriate. Concurrently, a very great deposit of ore is being developed in Canada by an American-controlled company having thousands of shareholders who, while they find daily quotations of the shares on the New York Stock Exchange, must wait patiently sometimes for months for the scantiest reference to progress of this development. It is noticeable that in many instances one must await the arrival of a time when additional capital is needed, to ascertain the detailed status of a business; with which information shareholders at other times may not be amply provided. It would not be fair to say that there are not exceptions, for some of the American porphyry-mining companies issued quarterly reports during their development stage and from time to time published information in respect to development progress, and at present are publishing quarterly reports with regard to production and profit. On the whole, however, the policy of the larger American and Canadian companies is not to give publicity as to progress at the mine, at least to the degree that is practiced in England. It is probably because of this policy that there are fewer individuals here than abroad who own mining shares, which is another way of stressing the thought that mining shares enjoy greater prestige on the other side and are not looked upon solely as speculations.

American Interest in Foreign Mining Securities

The advent of the activities of American bankers in the financing of mining companies domiciled abroad is relatively new. One writer on mining subjects, as early as 1915, remarked: "A combination of circumstances promises to have its effect, in that mining enterprises, though located at great distances abroad, will now be considered more seriously by American interests. The results will be that foreign mining securities will probably drift to these shores in volume, where they have thus far been more or less of a curiosity. The eventual development will be the formation of American companies for these properties, wherever be their location abroad."

This development, however, did not come so rapidly as the writer gave the impression that it would, for the only foreign mining securities which have found a market here since that time

are Rand Mines and Investment, an English holding company; DeBeers Consolidated Mines, Limited, a very important South African diamond operation; Patino Mines, the premier tin mine, located in Bolivia; Burma Corporation, a large lead-zinc-silver property in Burma, one of the successes with which President Hoover was identified in his engineering days; and the Rhodesian properties previously mentioned. These securities in part are dealt in on the New York Stock Exchange. This is not a very long list, but the circle of American individuals and investment trusts that find it of advantage to invest in foreign mining securities is quite large; in fact, among certain ones, such activity is a daily occurrence.

It is a fact that the English are much more prone to deal in our mining securities than we are in theirs. This is rather more because of their international view-point[2] (a qualification slow in developing in this country), than it is because of the degree of merit of the enterprises, for some of the English mining securities are of major quality, comparable in merit with the better ones of our own. Somehow, when it comes to mining securities, even of the better class, there is greater reluctance on the part of the American moneyed interests and the public to invest than there is abroad. This is accounted for partly by the large measure of diversion of attention to new enterprises in other industries existing here and partly by the restricted policy in the matter of publicity in the United States as compared to that enjoyed in England.

[2] See Muchnic, George: "Are Foreign Securities Undervalued in the American Market?" HARVARD BUSINESS REVIEW, April, 1930.

Investment Trusts and Mining Securities

Up to the present there have been but few investment trusts which specialize in mining securities and in which the public may participate.

The Newmont Corporation is, in a sense, an investment trust, but not quite as they are generally recognized here, for the reason that its portfolio is limited. The policy of this company is rather to take an active part in the management of corporations in which it holds very substantial share interests; Newmont is therefore more a holding corporation. Mayflower Associates is another of the well-sponsored investment trusts largely interested in mining securities. In both of these the organizers or sponsors have large holdings; this is an advantage in that it spells greater diligence on the part of the controlling interests. Metal and Mining Shares, Incorporated, established in recent years, is also on the market. There are a few other investment trusts interested largely in mining securities, and one or two in the making. The most recent ones have placed their shares privately. Some of the general investment-trust companies hold shares of the mining trusts, a satisfactory method of investment in the mining industry.

The general advantages of investment trusts are as well known as are the weak points. If one not in the industry confines his mining investments to companies of the nature previously outlined or to mining-investment trusts, his investment is more likely to prove profitable over the years than if placed in mining securities generally, but it is more difficult to decide as to the price to pay for investment-trust securities than for shares of companies owning individual mines. All trust shares

have had a tendency to sell substantially above book value, and it is difficult to convert the degree of value of management into dollars per share for any particular situation.

On the whole, most investment trusts give rather scanty information to their shareholders, and unless very frequent reports are published as to the operations of the trust, which is not always practicable, it is difficult to conclude what is a fair price to pay for this type of shares. Some trusts publish their portfolios once a year; others do not publish this information at all. Only confidence in the ability of the management, and the annual earning results over a period, can be a guide. The publication of the portfolio need not be considered too seriously, because certain securities may have been held for a considerable time and may possibly have been disposed of before the publication of reports. A company may have definite views as to the price at which it desires to purchase or sell a certain security and thus may have acted on more than one occasion during the period. The annual report would give no evidence of such interim transactions, so that the publication at long intervals of a list showing such securities as investment trusts are holding at a particular time may, after all, be unimportant from the standpoint of the shareholder—there being little basis to derive therefrom a figure for liquidating value, unless the full financial position of the company is shown.

Few of the investment trusts have been in operation long enough in this country to enable one to judge definitely as to their merit on the basis of performance, especially because of the fact that the period through which most of them have been operating has been until recently one of generally ascending markets. Nevertheless, especially in the matter of mining securities, investment trusts which, generally speaking, are sponsored by successful established concerns with reputations for integrity, are probably a more desirable form of investment than individual mining companies. They know where to turn to engage the best talent; through their contacts in the industry they are in a position to secure reliable data; and they can afford to bear the expense of close field investigation. Most of the existing trusts are directed by the best available talent, and it is a fair assumption that if they can not be successful in any period, the average individual could not have been either. In the case of the mining trusts, this is a certainty. Not a great deal of experience has as yet been had during periods of adversity. If a company of this type can weather a year of stress with attendant declining markets and still show no loss for the period, that is a performance which few individuals can show. If shareholders in investment trusts find it no more difficult to effect loans on their shares in bad times than they were accustomed to experience with their other securities, and if a policy of reasonable publicity is maintained as to progress of these concerns, then investment-trust securities should again become popular. The record of numerous mining-investment trusts in England has extended over a long period of years. The test of permanent popularity in the United States will not be measured by past earnings so largely as by performance, especially during such a time as the present when the vicissitudes of business have brought about a period of lower consumption of commodities.

PRICES IN CHAIN AND INDEPENDENT GROCERY STORES IN DURHAM, NORTH CAROLINA

By MALCOLM D. TAYLOR

Opposition to Chain Stores in the South

THERE has been considerable discussion in recent months as to whether or not chain stores actually undersell individually owned stores,[1] when the additional services offered by independents are considered. Interest in this phase of retail distribution is most in evidence in sections where the independents are actively engaged in a fight with the chains. Although opposition to chain stores is general throughout the South, it has been especially severe in North Carolina. Here the opposition has assumed two forms; first, an attempt to secure legislation unfavorable to the growth of the chains and, second, a more or less concerted effort on the part of local chambers of commerce and civic organizations to induce consumers to trade at independent stores.

That the independent merchants of the State are not without influence in the Legislature is evidenced by the fact that North Carolina now has its second anti-chain-store law. The first law was declared unconstitutional both by the Superior Court and by the State Supreme Court. The second law, which was attacked by the chains on the grounds that it, too, was in violation of both the state and federal constitutions, has been upheld in the Superior Court and is now before the State Supreme Court for decision. Under the provisions of this law all firms operating two or more stores in the State are taxed $50 annually on each store operated in excess of one. The law reads as follows:

> Every person, firm, or corporation engaged in the business of operating or maintaining in this State, under the same general management, supervision, or ownership, two or more stores or mercantile establishments where goods, wares, and/or merchandise is sold or offered for sale at retail shall be deemed a branch or chain store operator; shall apply for and obtain from the Commissioner of Revenue a State license for the privilege of engaging in such business of a branch or chain store operator, and shall pay for such license fifty dollars ($50.00) on each and every such store operated in this State in excess of one.
>
> (a) This section shall not apply to the business taxed under section 153 of this article.
>
> (b) Counties shall not levy a license tax on the business taxed under this section, but cities and towns may levy a license tax not in excess of the tax levied by the State.[2]

The anti-chain propaganda of local chambers of commerce and trade associations has assumed the form of paid advertisements in the newspapers, public meetings in which local or outside speakers denounce the chains, and radio broadcasting from local broadcasting stations. Campaigns have been launched against the chains in several cities and towns, among them Charlotte, Greensboro, Hendersonville, Burlington, and Hickory. A

[1] See Alexander, R. S., "A Study in Retail Grocery Prices," *New York Journal of Commerce*, in which a survey of stores in New York City showed quite different results from the following. Ed.

[2] Section 162 of the Revenue Act.

Citizens' Protective League was formed recently in Charlotte by a convention of independent merchants from North and South Carolina and a radio campaign directed against chain stores was planned. The *Greensboro News* for February 13, 1929, carried an account of a meeting of the Guilford County Community Builders at which a report was given of the activities of four women who were canvassing in High Point and Greensboro in an effort to pledge consumers to trade with independent stores.

Many of the contentions advanced in this controversy by representatives of both independents and chains have seemed unwarranted and exaggerated if not intentionally misleading. When the question of relative prices charged is discussed, speakers from both sides, unhampered by statistics on this subject—for there are few available—often appear to be limited only by the extent of their imaginations in quoting figures which bear out their assertions. It was in an effort to arrive at the truth regarding differences in prices charged in North Carolina that this study was undertaken.

Durham is a typical North Carolina city. It is the fourth city in size in the State, with a population of 42,258 according to a special census taken in 1925 at the time that the corporate limits were extended. The present population is estimated at 48,600; 68.3% of the people are native-born whites, 31.2% are blacks and 0.5% are foreign-born whites.

The principal industries are tobacco and textile manufacturing. In addition there are lumber, tool, fertilizer, and flour factories. A total of 13,000 persons is said to be employed by the sixty manufacturing enterprises in the city, and the annual pay roll is reported to be in excess of $13,000,000. Durham is also the seat of Duke University.

As far as could be determined, the situation as regards the distribution and sale of groceries at retail in Durham differs in no important respect from that in other large North Carolina cities. In the small towns in the eastern part of the State it is probable that independent merchants are at present doing relatively a much larger part of the business than in Durham, first because unsatisfactory farming conditions have forced consumers to buy "on time" and, second, because of the established custom whereby a tenant charges his groceries to the account of his landlord with the understanding that the bill will be paid at the time that the crops are sold.

Choice of Branded Articles Studied

Seventy-three nationally advertised articles were selected for comparison of prices. The choice of these articles was governed by several considerations: First, it was necessary that the branded goods chosen be sold by both chain organizations and independent stores, and that the quality be uniform. Second, it was desirable that the brand be found in a majority of stores regardless of size and location. Third, the brand should be one that could be easily recognized by the interviewer and about which little confusion would arise regarding size. Fourth, as far as possible, brands chosen should be representative of those used in the average home; in other words, few "fancy" groceries should be included. Fifth, the articles selected, in so far as consistent with the above, should give a true cross-section of the stock of branded goods carried by grocers. Several lines could not be

represented, of course, because of the absence of standardized brands.

It was first planned to select representative brands in all of the 43 different classes of food articles which the Bureau of Labor Statistics used in constructing its index numbers representing changes in annual expenditure for food by the average family. This would seem to offer an ideal method of comparison since the Bureau's weights, representing the annual consumption per family of each article, could be used in determining the annual cost of a family's food in Durham (a) when purchased at an independent store and (b) when purchased at a chain store.

This method, however, offered practical difficulties. In the first place, several of the commodities such as sirloin steak, round steak, rib roast and other meats (with the exception of bacon) were sold unbranded, and the quality of product carried in different stores was not comparable. Steak in one store at 50 cents a pound might actually be cheaper than that sold by a competitor at 40 cents. Even where meats were branded, the quality was not exactly comparable. The same difficulty was faced in the selection of fruits and vegetables sold in bulk, such as bananas, oranges, prunes, cabbage, onions, potatoes and navy beans. A second objection to the use of the Bureau's classification of products was that its extensive investigations, which were made in order to determine the annual consumption of average families in different sections of the United States, were carried on in 1918, and food habits have changed since that time. For example, it is thought that less corn-meal and meat and more fresh vegetables and milk are now used in this section of the South than in 1918. The weights undoubtedly have changed on many other products. A third difficulty lay in the fact that we were also interested in comparing prices for non-food products, such as soaps and cleaning powders. Moreover, several important food products were omitted from the Bureau's classification, for example, canned peaches, canned pineapple, and corn syrup.

It was decided to select articles representative of those included in the Bureau's list only where the same brand was sold in the majority of stores. Many other branded products meeting the requirements of comparable quality and size were added. The list may appear to include too many soaps and breakfast foods, but this was intentional as it was desired to find out to what extent these products were being used as "leaders" in chain stores.

The questionnaire form on which the information obtained from each retailer was recorded is shown in Table I. In the space at the bottom, the interviewer noted the "services" which the store offered in addition to the information indicated on the blank.[3]

[3] When the price questionnaires were being tabulated it was found that the information regarding services rendered customers was incomplete. The questionnaire printed below was, therefore, mailed to all independent stores with an accompanying letter of explanation. The letter was addressed to the person whom the student had interviewed. A few of the retailers were called on the telephone or seen personally.

No. Name of Store

1. Which of the following "services" do you offer to your customers:

   Charge Accounts? Yes No
   Delivery Services? Yes No
   Telephone Orders? Yes No

2. Approximately what per cent of your business is for cash? % What per cent charge? %
3. Are your cash prices and charge prices the same? Yes No If not, approximately how much do they differ?
4. Do you buy in cooperation with other retailers? Yes No If so, what products?

TABLE I. QUESTIONNAIRE USED IN PRICE STUDY

Name..... Address.....
Primary Shopping Center....Secondary Shopping Center....Neighborhood Store

	*Price (1)	*Price (2)		*Price (1)	*Price (2)
Bacon, Brookfield, 1 lb. box			Milk, Borden's Eagle, 15 oz		
Bacon, Sunnyfield, 1 lb. box			Milk, Carnation, 16 oz		
Baking Powder, Royal, 12 oz			Milk, Carnation, 6 oz		
Baking Powder, Rumford, 16 oz			Mustard, Coleman's, 2 oz		
Baking Powder, Calumet, 16 oz			Mustard, French's, 9 oz		
Beans, Campbell's			Oats, Quaker, 20 oz. box		
Beans, Heinz's			Oleomargarine, Nucoa, 1 lb		
Bon Ami, cakes			Pancake Flour, Aunt Jemima, 1¼ lb		
Borax, Mule Team, 16 oz			Peaches, Del Monte, No. 2½		
Bran, Kellogg's			Pineapple, Del Monte, No. 2		
Butter, Brookfield, 1 lb			Pineapple, Libby, No. 2 sliced		
Catsup, Heinz's, 14 oz			Postum, Instant, 4 oz		
Cheese, Kraft American, ½ lb			Post Toasties		
Cheese, Kraft Swiss, ½ lb			Puffed Rice		
Chocolate, Baker's Premium, ½ lb			Puffed Wheat		
Cleanser, Old Dutch			Raisins, Sun Maid, Puffed		
Cocoa, Baker's, ½ lb			Raisins, Del Monte, Seeded		
Cocomalt, ½ lb. can			Salad Dressing, Duke's, 8 oz		
Coconut, Baker's, moist, ¼ lb			Salad Dressing, Gelfand's, 8 oz		
Coconut, Dromedary			Salt, Morton's, 26 oz		
Coffee, Maxwell House, 1 lb. tins			Salt, Shaker, 2 lb. pkg		
Coffee, Whitehouse, 1 lb			Shredded Wheat		
Corn Flakes, Kellogg's, 8 oz. box			Soap, Fairy		
Corn Starch, Argo, 1 lb			Soap, Fels Naphtha		
Corn Syrup, Karo, Blue Lab. 1½ lb			Soap, Ivory, Laundry, Med		
Corn Syrup, Karo, Blue Lab. 10 lb			Soap, P and G		
Cream of Wheat, 28 oz. box			Soap, Lifebuoy		
Crisco, 1 lb			Soap, Octagon, Laundry size		
Flour, Gold Medal, 3½ lb. bags			Soap, Palmolive		
Flour, Pillsbury, 24 lb			Soup, Campbell's Tomato		
Gelatine, Knox			Syrup, Log Cabin, 12 oz		
Grape Juice, Welch, 1 pint			Tapioca, Minute, 8 oz		
Gold Dust			Tea, Lipton's, ¼ lb		
Grape Nuts			Tea, Tetley, ¼ lb		
Jello			Uneeda Biscuit, Small box		
Lard, Snowdrift, 6 lb. pail			Wesson Oil, quart		
Lard, Swift Jewel, 8 lb. pail			Wheatena, 22 oz. box		
Lux					

	Chain	Independent
Grocery		
General		
Fruits and Vegetables		
Meats, Poultry and Fish		
Other		

Investigator's name.....
Date.....
Person Interviewed.....
Does store buy cooperatively?.....
What products?.....
Is store a member of a "voluntary" chain?.....

* (1) Price per unit as printed.
(2) If some other unit is used, put price in the second column and write in the unit to which price refers.

Method of Investigation

The study was made on Tuesday, December 10, 1929. No special post-Thanksgiving or pre-Christmas sales were being held in any of the stores visited. Ten seniors in the School of Commerce, several of whom had had experience in either retail or wholesale grocery stores, made the investigation under the writer's direction. This work was entirely voluntary on their part and had nothing to do with

class requirements. They cooperated because they were interested in the study. They were carefully instructed in methods of investigation, and every precaution was taken to insure accuracy. Each investigator was furnished with a list of the stores that he was to visit and with a map showing their approximate location.

Every grocery store in the city was visited, neighborhood stores as well as stores in the primary and secondary shopping centers. Information was refused in only one independent store of a size large enough to be significant, and this was not one of the leading stores. Two chain stores declined to give prices; inasmuch as one of these belonged to an organization, nine stores of which are included in the study, and the other to an organization in which five stores furnished information, the results of the study are not changed by this omission.

Returns were secured from a total of 93 stores, 24 of which were chain stores and 69 individually owned. The number of stores actually visited was more than 100, but investigators were instructed not to fill out a blank where it was clearly evident that the store did not carry half of the articles on the list. Seven of the blanks secured from unit stores were not included in the tabulation, as they had prices on too few of the brands listed. The conclusions of this study, therefore, are based on prices secured from 62 unit stores and 24 chain stores.

Character of Stores Studied

Six chain-store organizations are represented in the study: The Great Atlantic and Pacific Tea Company (9 stores), Piggly Wiggly (3 stores, owned by the Milner Stores Company which operates approximately 29 Piggly Wiggly stores in the State), David Pender Grocery Company (5 stores), Jamison Stores Company (3 stores), Universal Stores (3 stores), and National Bellas Hess Company, Incorporated (1 store). Four of the chains listed might be classed as belonging to national chain-store organizations which operate stores outside of North Carolina, one of the chains is local, and the other chain operates stores in other cities but its activities are confined to the State.

It should be pointed out that one store in this group gives "service," including charge accounts, delivery and telephone orders. Approximately 45% of its sales are on a cash basis. The inclusion of this "service" chain store in the group is offset by the fact that one independent store, which is a member of a voluntary chain and sells only on a cash-and-carry basis, is listed with independent stores.

Practices regarding "services" offered by the independent stores varied widely in the 62 unit stores included in the study. One store, as mentioned before, belonged to a voluntary chain and was operated on a strictly cash-and-carry basis. One of the smaller stores did not give delivery service or accept telephone orders, but 75% of its business was on a "charge" basis. In another small grocery, merchandise was delivered and telephone orders were taken, but all sales were for cash. Prices in the two stores mentioned, however, were approximately the same as those charged by competitors giving full service.

Fifteen of the independent retailers visited stated that their "cash" prices and "charge" prices differed. This divergence in price usually took the form of a discount for cash on large bills. Two of the smaller retailers

stated frankly that their cash discount varied depending on the insistence of the customer, the better stores however having some uniform policy to which they adhered. For example, one large store gave 5% off for bills paid within a week, another, 10% off for cash on purchases of $5 or more. One of the most enterprising and progressive dealers visited had two sets of prices on all his merchandise, the cash price being approximately 10% to 15% lower. Two thirds of his sales were on a cash basis. The discount given for cash in the fifteen stores mentioned is summarized below:

6 gave a discount of 10%
5 " " " " 5%
2 " " " " 2 to 5%
2 had no definite policy.

A study of the individual returns revealed no significant differences in prices charged by stores which gave a discount for cash and those which did not. The "service" price was recorded by the interviewers in every instance. The practice in what appeared to be the four leading full-service stores in the city was as follows: Store W gave no discount for cash, store X gave 5% off for cash on large orders, store Y gave 10% off "on the average," store Z gave 5% off for cash.

Statistical Methods Used In Study

Prices from the 86 questionnaires were first listed by products on special listing sheets arranged so that the source of every quotation was indicated by the number of the questionnaire from which it was taken. Chain stores and unit stores were listed separately. The method used is illustrated, in Table II below, for six articles. Where the price did not refer to the unit printed on the questionnaire, the quotation was written in the second column.

Next, the data on the listing sheets were tabulated and summarized by prices. During the interview, if a dealer first stated the price of an article as "two for a quarter," the student recorded it as 12½ cents. If he first stated the price as 15 cents but later said that he sold it at "two for a quarter," both prices were recorded. However, on the summary forms only quantity prices were recorded. As a result the prices charged by independents appear lower than they would if quotations had been taken by single items. It was thought that the latter method would give the chains an unfair advantage, as their price tags often were marked "12½ cents" where the same articles sold in a unit store at 15 cents or two for 25 cents.

TABLE II. PRICE-LISTING SHEET FOR INDEPENDENT STORES

Quest. Number	Mustard "French's"		Oats "Quaker"		Oleomargarine "Nucoa"		Pancake Flour "Aunt Jemima"		Peaches "Del Monte"		Pineapple "Del Monte"	
	9 oz.				1 lb.		1¼ lb.		Can #2½		Can #2	
25	15	.....	15	2–25	28	.....	15	.....	.....	.....	30	
26	15	.....	13	2–25	25	.....	18	2–35	35	.....	30	
27	15	.....	15	st.	25	.....	17½	.....	30	.....	30	
28	15	.....	15	2–25	28	.....	15	.....	30	.....	28	
29	15	.....	12½	.....	.....	.....	18	2–35	30	.....	30	

Twelve articles, which were carried in only a few stores or concerning which some confusion had arisen as to the unit to which prices referred, were not included in the summary tabulation. Royal Baking Powder, Heinz Beans, Dromedary Coconut, Gold Medal Flour, Coleman's Mustard, Duke's Salad Dressing, Shaker Salt, Fairy Soap, and Fels Naptha Soap were omitted because of the limited number of quotations recorded. Mule Team Borax, Argo Corn Starch and Gold Dust were dropped because of confusion regarding sizes and weights. For example, two stores were selling Gold Dust at the same price, the box sold in one weighing 4 ounces, and in the other 7 ounces. The quotations on bacon were combined, since all chain-store prices were for Sunnyfield and only the individual stores sold the Brookfield brand; it had been ascertained before the list of articles was prepared that these two brands were more nearly comparable than others. In a neighboring town, for example, the proprietor of an M System Store which belongs to a voluntary chain, competes directly with a store operated by the Great Atlantic and Pacific Tea Company. Brookfield Bacon is commonly sold in the M Store at the same price charged by the "A and P" for Sunnyfield, which is a chain-store brand. Quotations on only one size of Karo Corn Syrup and one size of Carnation Milk were included in the final summary of the tabulated returns.

TABLE III. METHOD OF TABULATION
KELLOGG'S CORN FLAKES
(8 oz. Box)

(1) Prices Charged (Cents)	(2) Number of Quotations Recorded	(3) Price Times Number of Quotations (Col. 1 × Col. 2)	(4) Average Price (Arithmetic Average) Cents	(5) Common Price (Modal Average) Cents	(6) Per Cent Each Price is of the Highest Price (i.e. 13¢)	(7) Extension (Col. 2 × 6) %	(8) Per Cent that Average Price is of Highest Price
			A—*Independent Stores*				
7½	1	7.50	.....	.....	57.69	57.69	
8	1	8.00	.....	.....	61.54	61.54	
8⅓	4	33.33	.....	.....	64.07	256.28	
9	3	27.00	.....	.....	69.23	207.69	
10	50	500.00	.....	10	76.92	3,846.00	
13	2	26.00	.....	.....	100.00	200.00	
Totals....	61	601.83	9.86	.....	.....	4,629.20	75.89
			B—*Chain Stores*				
7½	14	105.00	.....	7½	57.69	807.66	
8⅓	8	66.66	.....	.....	64.07	512.56	
9	2	18.00	.....	.....	69.23	138.46	
Totals....	24	189.66	7.90	.....	.....	1,458.68	60.77

After the price data from the listing sheets had been summarized by brands, as indicated in columns (1) and (2) of Table III, the average price charged for each brand was ascertained (a) for independents and (b) for chains. Two forms of average were used, first,

TABLE IV. COMPARISON OF PRICES IN CHAIN AND INDEPENDENT STORES

	(1) Unit	(2) Number of Quotations Independent Stores	(3) Number of Quotations Chain Stores	(4) (5) Average Price (Arithmetic Average)		(6) (7) Most Common Price (Modal Average)		(8) (9) Lowest and Highest Prices Quoted		(10) (11) Average Percentage of Highest Quotations		(12) Average Amount Saved at Chain Stores (Cents)	(13) Per Cent Saved at Chain Stores (%)
				Independent Stores (Cents)	Chain Stores (Cents)	Indep. Stores (Cents)	Chain Stores (Cents)	Indep. Stores (Cents)	Chain Stores (Cents)	Independent Stores (%)	Chain Stores (%)		
Bacon, Brookfield or Sunnyfield	1 lb. box	27	8	47.76	40.63	50	39	40 to 55	35 to 51	86.84	73.87	7.13	14.93
Baking Powder, Rumford	16 oz.	58	24	33.78	29.38	35	30	30 to 40	25 to 30	84.44	73.44	4.40	13.03
Baking Powder, Calumet	16 oz.	41	24	33.71	29.50	35	29	25 to 35	29 to 33	96.31	84.29	4.21	12.49
Beans, Campbell's	.....	49	24	11.94	10.00	none	10	10 to 15	10 only	79.58	66.66	1.94	16.25
Bon Ami, cakes	.....	48	24	12.11	10.16	none	10	10 to 15	09 to 12	80.76	67.77	1.95	16.10
Bran, Kellogg's ("All Bran" excluded)	.....	47	16	13.61	12.53	15	none	10 to 15	10 to 14	90.71	83.54	1.08	7.94
Butter, Brookfield	1 lb.	53	16	57.77	50.88	60	49	50 to 65	49 to 60	88.88	78.28	6.89	11.93
Catsup, Heinz's	14 oz.	26	16	29.15	24.25	none	23	23 to 35	19 to 29	83.30	69.28	4.90	16.81
Cheese, Kraft American	½ lb.	14	14	27.50	26.86	none	25	20 to 35	25 to 32	78.57	76.74	.64	2.33
Cheese, Kraft Swiss	½ lb.	11	11	28.63	25.72	none	25	20 to 35	25 to 30	81.82	73.51	2.91	10.16
Chocolate, Baker's Premium	½ lb.	39	23	24.87	21.87	25	22	20 to 30	19 to 23	82.90	72.89	3.00	12.06
Cleanser, Old Dutch	.....	57	24	9.64	7.77	10	7½	8 to 10	7½ to 10	96.37	77.77	1.87	19.40
Cocoa, Baker's	½ lb.	30	22	25.30	21.64	25	22	20 to 35	15 to 25	72.29	61.82	3.66	14.47
Cocomalt	½ lb. can	27	23	24.37	24.30	25	25	15 to 30	22 to 25	81.23	81.01	.07	.29
Coconut, Baker's moist	¼ lb.	55	24	18.12	14.96	none	15	15 to 20	13 to 16	90.59	74.79	3.16	17.44
Coffee, Maxwell House	1 lb. tins	58	24	54.93	46.29	none	45	44 to 60	44 to 49	91.55	77.15	8.64	15.73
Coffee, Whitehouse	1 lb.	31	18	54.74	49.50	none	49 & 50	44 to 60	44 to 60	91.24	82.50	5.24	9.57
Corn Flakes, Kellogg's	8 oz. box	61	24	9.86	7.90	10	7½	7½ to 13	7½ to 9	75.89	60.77	1.96	19.88
Corn Syrup, Karo Blue Label	1½ lb. can	47	20	15.07	12.97	15	none	12½ to 20	12½ to 14	75.37	64.87	2.10	13.93
*Corn Syrup, Karo Blue Label	10 lb. can	12	16	76.67	67.13	75	none	70 to 85	63 to 72	90.20	78.97	9.54	12.44
Cream of Wheat	28 oz. box	45	24	25.64	24.33	25	24	20 to 30	23 to 25	85.48	81.11	1.31	5.11
Crisco	1 lb.	16	22	28.56	23.00	none	23	25 to 35	22 to 25	81.60	65.70	5.56	19.47
Flour, Pillsbury	24 lb.	32	21	134.16	124.33	none	125	120 to 150	115 to 135	89.44	82.89	9.83	7.33
Gelatine, Knox	.....	25	21	23.84	20.00	25	20	15 to 25	15 to 23	95.36	80.00	3.84	16.11
Grape Juice, Welch	1 pint	31	15	35.00	30.40	none	none	25 to 40	25 to 35	87.50	76.00	4.60	13.14
Grape Nuts	.....	37	22	19.11	17.91	20	18	15 to 25	17 to 18	76.43	71.64	1.20	6.28
Jello	.....	59	24	10.34	8.47	10	8⅓	8⅓ to 15	8⅓ to 10	68.94	56.46	1.87	18.09
Lard, Snowdrift	6 lb. pail	26	21	128.96	116.38	none	115	110 to 150	115 to 123	85.97	77.59	12.58	9.75
Lard, Swift Jewel	8 lb. pail	16	22	123.37	111.27	none	110	110 to 140	110 to 120	88.13	79.48	12.10	9.81
Lux	.....	60	23	13.74	10.07	none	10	10 to 15	8⅓ to 11	91.61	67.15	3.67	26.71
Milk, Borden's Eagle	15 oz. can	53	22	23.69	19.32	25	20	20 to 25	18 to 20	94.75	77.27	4.37	18.45
Milk, Carnation	16 oz. can	42	24	13.27	10.13	none	10	10 to 15	10 to 12	88.49	67.50	3.14	23.79
*Milk, Carnation	6 oz. can	52	24	7.11	5.08	7½ & 8	5	5 to 8⅓	5 to 6	85.32	61.00	2.03	28.55
Mustard, French's	9 oz.	60	22	14.55	12.61	15	12½	10 to 15	10 to 15	97.00	84.09	1.94	13.33
Oats, Quaker	20 oz. box	60	24	12.98	9.88	none	10	10 to 15	7 to 11	86.50	65.85	3.10	23.88

Milk, Borden's Eagle	15 oz. can	53	22	23.69	19.32	25	20	20 to 25	18 to 20	94.75	77.27	4.37	18.45
Milk, Carnation	16 oz. can	42	24	13.27	10.13	none	10	10 to 15	10 to 12	88.49	67.50	3.14	23.70
*Milk, Carnation	6 oz. can	52	24	7.11	5.08	7½ & 8	5	5 to 8⅓	5 to 6	85.32	61.00	2.03	28.55
Mustard, French's	9 oz.	60	22	14.55	12.61	15	12½	10 to 15	10 to 15	97.00	84.09	1.94	13.33
Oats, Quaker	20 oz. box	60	24	12.98	9.88	none	10	10 to 15	7 to 11	86.50	65.85	3.10	23.88
Oleomargarine, Nucoa	1 lb.	20	21	27.05	24.95	none	25	25 to 30	24 to 25	90.16	83.17	2.10	7.76
Pancake Flour, Aunt Jemima	1¼ lbs.	42	24	16.35	14.00	15	14	12½ to 20	12½ to 16	81.73	70.00	2.35	14.37
Peaches, Del Monte	can #2½	27	23	30.44	28.01	30	29	25 to 35	25 to 32	86.98	81.74	1.83	6.01
Pineapple, Del Monte (sliced)	can #2	23	23	30.48	28.61	30	29	25 to 35	25 to 32	87.08	81.74	1.87	6.13
Pineapple, Libby (sliced)	can #2	26	19	30.57	25.53	none	25	20 to 35	23 to 29	87.36	72.93	5.04	16.49
Postum, Instant	4 oz.	32	21	26.13	24.52	25	25	20 to 35	22 to 26	74.64	70.07	1.61	6.16
Post Toasties		58	24	9.94	7.85	10	7½ & 8⅓	7 to 15	7½ to 8⅓	66.25	52.30	2.09	21.03
Puffed Rice		44	24	16.95	16.23	none	17	12 to 20	12 to 17	84.77	81.15	.72	4.25
Puffed Wheat		50	24	15.26	14.00	15	14	12 to 20	12 to 17	76.30	70.00	1.26	8.26
Raisins, Sun Maid, Puffed	15 oz.	48	15	14.10	11.47	15	10 & 12½	10 to 20	10 to 15	70.52	57.33	2.63	18.65
Raisins, Del Monte, seeded	15 oz.	25	20	13.96	10.73	15	10	10 to 15	10 to 15	93.07	71.50	3.23	23.14
Salad Dressing, Gelfand's	8 oz.	48	20	25.19	21.60	25	21	20 to 30	21 to 23	83.96	72.00	3.59	14.25
Salt, Morton's	26 oz.	43	22	10.08	8.62	10	8⅓	8⅓ to 12½	8⅓ to 10	80.62	68.96	1.46	14.48
Shredded Wheat		43	24	15.16	12.40	15	12½	12 to 20	12 to 13	75.81	61.98	2.76	18.21
Soap, Ivory, Laundry size	Medium	50	23	9.50	7.41	10	7½	8 to 10	6¼ to 8	95.00	74.13	2.09	22.00
Soap, P and G		56	24	4.91	4.26	5	4⅛	3⅓ to 5	4 to 5	98.20	85.14	.65	13.24
Soap, Lifebuoy		26	22	9.24	6.86	10	6⅔	6 to 10	5⅚ to 7½	92.44	68.56	2.38	25.76
Soap, Octagon, Laundry size	Large	40	18	9.27	6.35	10	6¼	6¼ to 10	6¼ to 7	92.69	63.47	2.92	31.50
Soap, Palmolive		58	24	9.24	7.64	8⅓ & 10	7⅔	8 to 10	6¼ to 8⅓	92.41	76.42	1.60	17.32
Soup, Campbell's Tomato		60	24	11.56	8.89	10 & 12½	8⅓	8⅓ to 15	8⅓ to 10	77.09	59.24	2.67	23.10
Syrup, Log Cabin	12 oz.	32	23	33.34	27.09	35	27	30 to 35	25 to 28	95.27	77.39	6.25	18.75
Tapioca, Minute	8 oz.	15	19	14.73	14.00	15	14	13 to 20	12 to 15	73.67	70.00	.73	4.96
Tea, Lipton's	¼ lb.	34	20	26.56	24.60	25	25	25 to 30	23 to 25	88.53	82.00	1.96	7.38
Tea, Tetley	¼ lb.	10	17	26.00	24.65	25	25	20 to 30	23 to 25	86.66	82.15	1.35	5.19
Uneeda Biscuit		49	24	5.00	5.00	5	5	5 only	5 only	100.00	100.00	.00	.00
Wesson Oil	1 quart	40	23	57.25	49.30	60	49	49 to 65	49 to 52	88.08	75.85	7.95	13.89
Wheatena	22 oz. box	10	22	26.80	24.27	25	25	25 to 35	18 to 25	76.57	69.35	2.53	9.44
Totals.....(60 Articles)		2,350	1,273										827.62
													827.62% ÷ 60 = 13.79%

* The figures for Karo Corn Syrup (large size) and Carnation Milk (small size) were not included in Totals.

Explanatory Note.—Columns (10) and (11) are unnecessary but they were included in order to furnish an independent check on the accuracy of the computations. Two columns which were included in Table III, namely columns (6) and (7), have been omitted from Table IV, since they also were used only as a check on the accuracy of the work in Table III. All the essential statistics are presented in Table IV. The figures printed in the first eleven columns were taken from the price-tabulation sheets, all of which were similar in form to the one shown for Kellogg's Corn Flakes in Table III. The percentages in column (13) were computed for each article by subtracting the average chain-store price from the average independent-store price and then dividing the remainder by the average independent-store price.

the arithmetic or mean average and second, the modal average. Unless half of the quotations were for a specific price it was not designated as the common or "modal" price. In some cases there were two distinct modes and in others no mode was apparent. The percentage relationships between each price and the highest single price recorded for that brand were computed and also the relation which the "average price" bore to the highest price. The latter figure was used when comparing one brand with another. The method employed is indicated in the tabulation for Kellogg's Corn Flakes in Table III.

Results of the Study

Table IV shows in summary form the data on which conclusions were based. Objection may be made to the brands selected for study on the ground that soaps are given too much weight. Omitting the five soap products from the list the average saving at chain stores is 13.05%. Omitting eight commodities on which the largest saving is shown, the average saving on 52 articles becomes 12.07%.

In order to meet a second criticism of the choice of articles, an objection which we readily admit, namely that an item such as salad dressing, which some families may never purchase, is given as much weight as a staple commodity like flour or lard which is in constant demand, we have prepared a budget of the annual expenditure for 20 articles representing 15 types of commodities which are included in the Bureau of Labor Statistics index of food prices.

The weights which are used represent the annual consumption of each article by the average working man's family in the South Atlantic section of the United States. As mentioned before, these weights themselves are open to criticism but they are the best now available. Agents of the Bureau visited 9,000 families in 51 cities in securing the data on quantities of each article consumed in the United States.

This material is presented in Table V. The total cost for the amount of each product used during a year by the average family is given in column 6 where purchases are made at independent stores, and in column 7 where the chain is patronized. The annual saving on the 20 products amounts to 12½%. The largest saving in dollars and cents is made on butter and coffee.

It may be interesting to observe the average savings on various groups of products when they are purchased at a chain store.

21.96% is the average saving on 5 soaps.
12.43% is the average saving on 10 breakfast foods. (The largest saving is on Quaker Oats and Post Toasties).
8.99% is the average saving on 8 beverages.
9.54% is the average saving on 3 canned fruits.
20.74% is the average saving on 3 cleaners.
13.98% is the average saving on 10 products used in the preparation of foods before they are cooked.
15.78% is the average saving on 7 desserts or materials used in desserts.

In the classification above of 10 products used in the preparation of foods before they are cooked are included: Rumford Baking Powder, Calumet Baking Powder, Brookfield Butter, Crisco, Pillsbury Flour, Snowdrift Lard, Swift Jewel Lard, Borden's Eagle Milk, Carnation Milk, and Wesson Oil. The seven desserts or materials used in desserts are: Baker's Premium Chocolate, Baker's Moist Coconut, Knox Gelatine, Jello, Sun Maid Puffed Raisins, Del Monte Seeded Raisins and Minute Tapioca. The reader can easily check the above computations by adding the percentages which appear

TABLE V. BUDGET OF TWENTY ARTICLES

	Unit Used in Study	Bureau's Weights (Annual Consumption)	Bureau's Weights in Terms of Unit Used in Study	Average Prices Charged		Total Annual Cost	
				By Independents (Cents)	By Chains (Cents)	Independents	Chains
Bacon	1 lb.	20 lbs.	same	47.76	40.63	$ 9.55	$ 8.13
Milk, evaporated (Carnation)	1 lb.	73 lbs.	same	13.27	10.13	9.69	7.39
Butter (Brookfield)	1 lb.	56 lbs.	same	57.77	50.88	32.35	28.49
Oleomargarine (Nucoa)	1 lb.	9 lbs.	same	27.05	24.95	2.43	2.25
Cheese (Kraft American)	1 lb.	6½ lbs.	same	27.50	26.86	1.79	1.75
(Kraft Swiss)	1 lb.	6½ lbs.	same	28.63	25.72	1.86	1.67
Lard (Snowdrift)	6 lbs.	19 lbs.	same	*21.49	*19.40	4.08	3.69
(Swift Jewel)	8 lbs.	19 lbs.	same	*15.42	*13.91	2.93	2.64
Crisco	1 lb.	10 lbs.	same	28.56	23.00	2.86	2.30
Flour, (Pillsbury)	24 lbs.	313 lbs.	same	*5.59	*5.18	17.50	16.21
Rolled Oats (Quaker)	20 oz. box	31 lbs.	24.8 boxes	12.98	9.88	3.22	2.45
Corn Flakes, Kellogg's	8 oz. box	6 lb.	12. boxes	9.86	7.90	1.18	.95
Cream of Wheat	28 oz. box	2 lb.	1⅐ boxes	25.64	24.33	.29	.28
Beans, Campbell's	1 lb. can	10 lb.	same	11.94	10.00	1.19	1.00
Tea, (Lipton's)	¼ lb.	3 lb.	same	*106.24	*98.40	3.19	2.95
(Tetley)	¼ lb.	3 lb.	same	*104.00	*98.60	3.12	2.96
Raisins, (Sun Maid)	15 oz.	2 lb.	same	14.10	11.47	.28	.23
(Del Monte)	15 oz.	2 lb.	same	13.96	10.73	.28	.21
Coffee, (Maxwell House)	1 lb.	21 lb	same	54.93	46.29	11.54	9.72
(Whitehouse)	1 lb.	21 lb.	same	54.74	49.50	11.50	10.40
				Total annual expenditure		$120.83	$105.67
				Amount saved by trading at chain store $15.16 or 12.55%			

* These prices were reduced to a per-pound basis.

in the last column of Table IV opposite each article and dividing their sum by the number of articles in the group under consideration. Other groupings of the 60 products can readily be made in the same manner.

Conclusions

No recent data are available on the cost of the "services" offered by independent stores. In Bulletin No. 52 of the Bureau of Business Research of Harvard University entitled "Operating Expenses in Grocery Stores in 1924," common percentages are given for the operating expenses in the 545 stores which report to the Bureau. Only two of the expenses listed can be classed as arising solely through the offering of services to customers:

Delivery	1.2% of net sales.
Losses for bad debts	0.4% of net sales.
Total	1.6% of net sales.

Other expenses, such as salaries and wages of delivery and clerical force and interest charges, would be considerably larger in service stores. On the basis of a study of 389 stores, the Bureau concludes that "stores specializing on cash sales commonly operated with total expense which was 4% less than the common figures for stores specializing on charge sales."

Common expense percentages in grocery stores in 1929 may differ

considerably from similar figures compiled for 1924. It is a safe assumption, however, that the additional charges incident to the offering of delivery service, charge accounts, and the taking of telephone orders by independent stores do not amount to 13% of sales or any figure approaching that. The only conclusion, then, that one can draw is that, as least in Durham, North Carolina, chain stores do offer an appreciable saving to consumers.

While detailed comparisons cannot be given here without revealing the identity of the store to those familiar with the local circumstances, a comparison of the prices charged in six large independent stores was made with the common prices (modal prices) for all chains combined. Where no modal price was listed opposite a brand in Table IV, the average (arithmetic) price was used. The order of arrangement of the stores is not significant.

Store A. The typical chain store was 12.87% lower on the 51 brands which were carried in common. This store gave 5% off for cash. It is located in the primary shopping center.

Store B. The typical chain store was only 1.78% lower on 51 brands which were carried in common. This store had two sets of prices on all merchandise, and in the above comparison the "cash" prices were used. Its "cash" prices therefore were but little higher than the prices in chain stores. The chain showed the largest savings on butter and coffee. Fifteen articles were sold at the same price, Store B was lower on ten articles, and the chain was slightly lower on the rest. Prices in the typical chain store were 15.57% lower than the "service" prices in this store. Store B is a neighborhood store.

Store C. The typical chain store was 13.69% lower on the 56 brands carried. This store gave 5% off for cash. Approximately 10% of its business was for cash and 90% charge. It is located in a secondary shopping center.

Store D. The typical chain store was 5.96% lower on the 45 brands carried by both. Cash prices and charge prices were the same at this store, and approximately 10% of its business was on a "cash" basis. It is located in the primary shopping center.

Store E. The typical chain store was 10.60% lower on the 59 brands compared. This store gave 10% off for cash except on small purchases, and approximately 50% of its business was transacted on a cash basis. It is located in the primary shopping district.

Store F. The typical chain store was 14.67% lower on the 61 brands compared. This store gave 10% off for cash on large orders, and approximately 90% of its sales were made on a charge basis. It is located in a secondary shopping district.

Progressive independent grocers can compete and are competing with the chains in Durham. Many consumers will continue to demand the additional services which the independents render. Some customers cannot afford to pay cash, while others wish to telephone their orders and have the merchandise delivered. It is questionable whether one can justify the effort and money now being spent in this State in denouncing chain stores. Such practices in the long run are bound to react against the independents. Organizations of independent merchants could profitably emphasize methods of improving retailing and group buying and educate retailer members in the most economical and efficient ways of conducting their businesses; the outlook for the future of the "average" unit grocery store would at least then be more hopeful.

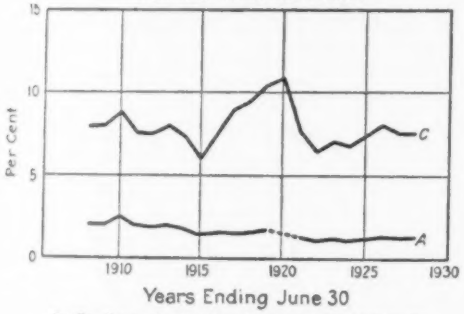
PROFITS OF COMMERCIAL BANKS

By ROLLIN POSEY

NO questions have attracted more attention in American banking circles in recent years than the problem of declining bank profits and the development of chain and branch banking in the United States. The present, therefore, appears to be an opportune time for analyzing recent trends in profits of commercial banks, suggesting methods whereby their net earnings may be increased, and estimating the probable success of chain and branch organizations as a means of increasing profits in commercial banking.[1]

Chart 1

PROFITS OF NATIONAL BANKS



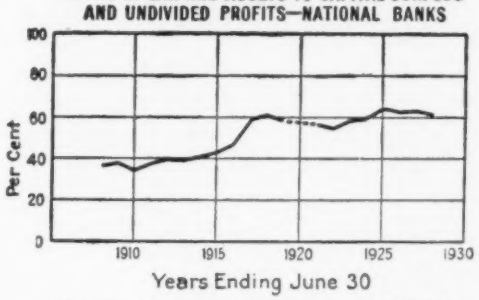
C= Profits on Capital Surplus and Undivided Profits
A= " " Earning Assets

An examination of profits of national banks during pre-war and post-war periods would seem to indicate that banking has been holding its own in profit making. For instance, from 1908 to 1914, return on capital investment of these banks averaged 8.0%; from 1921 to 1928, the average return was 7.5%.

But is the return on capital investment a satisfactory basis of comparison? Changes in price levels, of course, do not affect the comparison, but only the totals of credit outstanding.[2] Earnings arise from total earning assets, that is, loans, discounts and investments, not merely the portion of assets represented by owners' equities; so the ratios of profits to total earning assets are more significant than the ratios of return on capital investment. For this reason, it is this comparison that will be used in further analyzing profits. The comparison of pre-war and post-war returns on earning assets reveals that these profit ratios show a distinct secular trend downward.

Chart 2

RATIO OF EARNING ASSETS TO CAPITAL SURPLUS AND UNDIVIDED PROFITS—NATIONAL BANKS



Source:— Comptroller's Reports — 1908 - 1928

The apparent discrepancy between these two methods of comparison of trends of rates of return is explained by the fact that the ratio of earning

[1] Statistics used in this article relate to national banks only. No comparable data for state banks are readily obtainable. Figures for state banks, however, if available, would no doubt show trends similar to those for national banks. Since the reasons for such trends are the same for state as for national banks, the methods suggested in this article for increasing profits apply to commercial banks in general—state as well as national.

[2] N. A. Pattillo, *Op. cit. infra*, p. 45.

assets to capital investment has concomitantly increased; in the period 1921–1928, this ratio increased 57% over the figure for the earlier period. Therefore, profits on capital should have increased 57% for the later period.

The causes of the declining profits on earning assets may have been decreases in gross income received; or increases in interest paid, in other expenses, and in losses incurred on loans.

Territorial Variation

Factors affecting profits have not shown the same trends in all sections of the country, but rather different trends in different regions. For example, Chart 3, page 427, shows that banks in Eastern states have experienced no unusual losses on loans recently, while such losses have almost wiped out profits of banks in Western states.[3]

Limitations of space prevent any detailed consideration of all significant regional differences. Only conspicuous examples will be cited. An examination of the charts will reveal other regional comparisons.

Gross Income

The ratio of gross earnings to earning assets shows a small but encouraging upward trend. The trend of this ratio has not depended so much upon interest income as upon income from banking services rendered. Collections, foreign and domestic exchange, security sales, and trust and other services have contributed to the increase in gross earnings. The extension of these services probably is wise even though they may not directly pay a profit, for they may increase goodwill toward the bank and they absorb part of the overhead cost. The decision to extend these services must vary with the individual bank and the particular service in question. In general, however, the number of banks expanding their income-producing operations indicates that bankers have almost uniformly regarded the extension of such services as sound policy.

There is nothing to measure what interest income "might have been." Commercial financing through banks has undoubtedly been declining relatively to total commercial financing. Installment selling, financed through credit companies, has increased enormously. Speedy transportation has decreased capital tied up in transit.[4] Hand-to-mouth buying has decreased the size of inventories in distributors' hands without an equal increase in manufacturers' inventories.[5] The recent facility with which equity financing could be accomplished enabled many companies to convert current liabilities into permanent capital. Large corporate surpluses have been built up through the retention of profits as a result both of a conservative uncertainty as to the future and of attempts to avoid heavy income taxes. The decrease in commercial borrowing is indicated by the rise in time deposits relative to demand deposits (Table I, page 428), and the existence of corporate surpluses by the recent high totals of brokers' loans from "others."

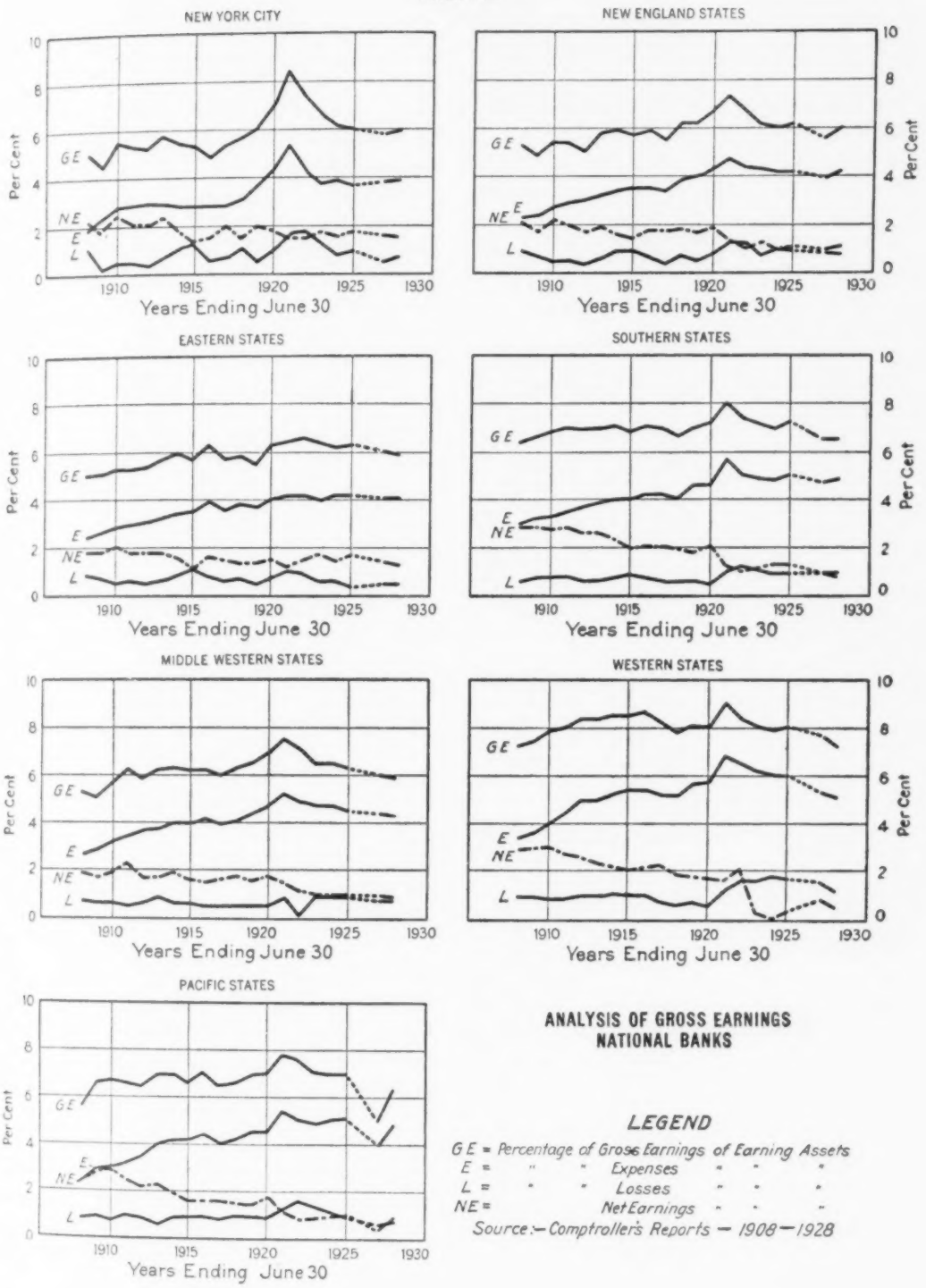
What will happen to this commercial borrowing in the future? Installment selling is not likely to increase in the near future. Even faster transportation will further reduce financing of

[3] Tables from which these graphs were constructed were found in part in an unpublished thesis in Widener Library, "Statistical Studies of National Bank Profits," by N. A. Pattillo. Pattillo obtained his data from the Comptroller's Reports, which were used to bring his tables up to date.

[4] W. L. Crum, *The Interpretation of the Index of General Business Conditions*, 1929 ed., p. 20.

[5] L. S. Lyons, *Hand-to-Mouth Buying*, p. 275.

Chart 3



ANALYSIS OF GROSS EARNINGS
NATIONAL BANKS

LEGEND

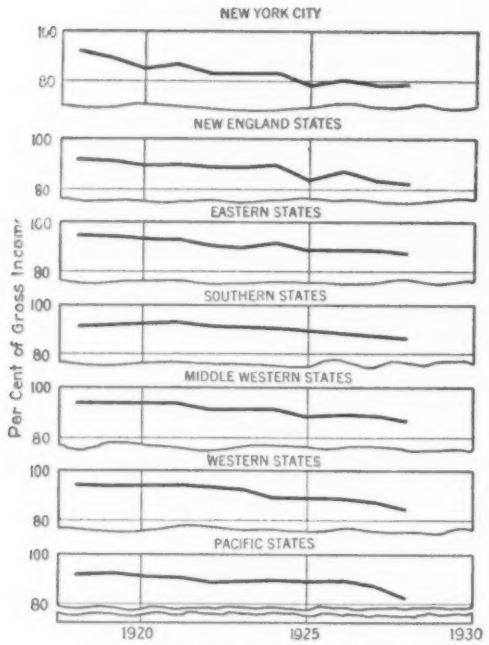
GE = Percentage of Gross Earnings of Earning Assets
E = " " Expenses " " "
L = " " Losses " " "
NE = Net Earnings " " "

Source:—Comptroller's Reports — 1908—1928

goods in transit. It is safe to say that hand-to-mouth buying is being carried near its limit at present. Further savings in this regard by commerce will be small in comparison with savings already effected. Equity financing has fallen from its favorable

Chart 4

INTEREST AND DISCOUNT INCOME NATIONAL BANKS



Source.— Comptroller's Reports — 1918–1928

position. That a situation similar to that recently prevailing could last indefinitely is wholly improbable. The retention of profits may suddenly cease if the law against retaining funds not necessary to the conduct of the business is enforced. It probably will not be enforced, but even then the recent tax reduction, together with the likelihood of further reductions, will allow profits to be released. Surplus funds now retained because of uncertainty as to the solution of present problems will be

TABLE I. PERCENTAGE OF TIME TO DEMAND DEPOSITS

	Reserve City Banks	Country Banks
12–31–14	7.3%	37.9%
12–31–15	7.8	40.7
12–27–16	9.8	43.9
12–31–17	10.7	48.0
12–31–18	9.8	49.0
12–31–19	12.9	51.9
12–29–20	15.7	66.2
12–31–21	17.9	77.2
12–29–22	21.3	76.5
12–31–23	24.6	84.3
12–31–24	27.0	88.7
6–30–26	30.1	97.6

Source: Calculated by Pattillo from Comptroller's Reports.

disposed of as time solves these problems. The need for bank accommodation will decrease as transportation speeds up, but other factors that decreased this need in the past will not operate more strongly in the future. In the aggregate, banks have little to fear from lessening need for their commercial function.

Though ostensibly banks in agricultural regions do not extend long-term credit, practically they do advance funds for capital purposes.[6] The cream of this business was taken away from them by the government-sponsored Land Banks and Intermediate Credit Banks. Now the new Farm Board loans operate in this manner: after cooperative organizations have obtained as much credit as they can from commercial sources (banks) the Board is empowered to lend them more "than is practicable under other credit facilities" at a rate not to exceed 4%. Will cooperatives bend their efforts to borrow from banks as much as before when they can obtain any additional accommodation necessary at 4%? The $500,000,000 to be loaned by the Board will to some extent cut

[6] W. F. Mitchell, *The Uses of Bank Funds*, p. 14.

into the business of local agricultural banks. Banks in agricultural regions have a darker outlook than industrial banks.

The Federal Reserve Board's policy of stabilizing interest rates will tend to stabilize interest income of banks. But because changes in interest income due to changes in interest rates are simultaneously accompanied by almost equal changes in interest paid, the effect of interest rates on net income is minor.[7]

Losses on Loans

In most regions, loan losses have exhibited a tendency to decline, and in no region have they displayed a continuing upward trend.[8] A comparison of losses with the margin between gross earnings and expenses shows that in general this margin has been decreasing at a faster rate than have losses.[9] This means that though losses have been decreasing absolutely, their relative effect on net profits has been increasing.

Losses have fluctuated cyclically more than either gross income or expenses.[10] Since the margin "applicable" to losses is decreasing, a continuation of this trend will mean that losses will play the major rôle in absorbing profits in future depressions.

Especially will this be true in sections in which one industry predominates. The greatest fluctuations have been in agricultural regions.[11] Of course profits of banks in these regions are more subject to fluctuation, because these banks depend essentially upon one industry. The prosperity of their merchant customers depends upon the prosperity of local farmers.

But that does not explain why the ratio of loan losses to earning assets is greater in these regions than elsewhere.[12] There are two possible reasons: either agricultural loans are inherently poorer than industrial, or the proportion of local loans to earning assets is too high. The administration of agricultural loans involves a technique and criteria peculiar to itself, yet the soundness of such loans is not thereby affected. Carefully selected agricultural loans are as safe as loans to commercial or industrial borrowers.[13]

It seems, therefore, that the relatively greater losses on loans in agricultural sections are the result of excessive concentration in local loans. From 1922 to 1928, all national banks had 56% of earning assets in local loans, whereas Middle Western banks had 60% in such loans. Sound banking practice for an individual bank limits the amount to 55% of total assets.[14]

TABLE II. RELATION OF LOCAL LOANS TO EARNING ASSETS, AND TO TOTAL RESOURCES

	Percentage of Earning Assets		Percentage of Total Assets	
	Middle West	U. S.	Middle West	U. S.
9–15–22	61%	59%	58%	54%
9–14–23	64	58	56	55
10–10–24	58	55	55	52
9–8–25	61	56	56	53
10–10–27	57	54	54	53
10–3–28	57	53	54	52

Source: Comptroller's Reports.

[7] N. A. Pattillo, *Op. cit.*, p. 178.

[8] Chart 3.

[9] The margin is the distance between GE and E on the charts.

[10] Chart 3.

[11] Middle Western, Southern, and Western states.

[12] Notice the level in Western states (Chart 3).

[13] George J. Schaller, "Loans to Farmers." *Proceedings* of Mississippi Valley Conference on Commercial Bank Management, Clearinghouse Section, A. B. A., pp. 36–38.

[14] As evidenced by figures for national banks. Oct. 3, 1928, local loans were 52% of total assets.

In regions of one industry, say agriculture, the lack of diversification should lower this figure even more. Since these "extra" loans are of a marginal nature, losses on them may form a considerable portion of all losses. To decrease losses on local loans, agricultural banks should decrease their relative amounts of local loans.

In sections where one industry predominates, some diversification can be achieved by sufficiently large secondary reserves and investments, themselves carefully diversified. The principles to be followed are too well known to need repeating. As examples of poor administration of investments may be mentioned the policy of a bank in southern Illinois which confined its investments exclusively to debenture bonds of public-utility holding companies, as well as the practice of a bank in northeastern Kansas which restricted its investments to local farm mortgages and local municipals.

Loan administration in general has displayed but one glaring defect. "In an analysis of 16 small country banks, small loans—that is, loan lines below $200—represented 40.9% of the total number, but only 2.7% of the total dollars involved."[15] Disregarding the expense, surely the loan officers could use time spent in making many of these small loans to greater advantage by administering more carefully their important lines of credit. It is only through more careful scrutiny of major loans, with consequent elimination of the poorer risks, that loan losses will be reduced. Especially is this true in times of prosperity, for such periods in the past have preceded depressions, with their mounting losses that quickly wipe out profits.

[15] *Loan Administration Policies:* Clearinghouse Section, A. B. A., p. 10.

It has been pointed out that losses on loans have increased in relative importance. To combat abnormal losses in agricultural and other regions of one industry, banks should weed out the poorer local loans and increase and soundly diversify their other earning assets. Banks in general need to allocate the time of their loan officers more in accord with the importance of their tasks.

Expenses

Overhead costs constitute only a small proportion of the total costs of banking, for fixed assets represent but a small portion of total assets. This is evidenced by the correlative movements of expenses and gross earnings.[16] It was noted on page 429 that the margin between gross earnings and expenses has been decreasing. That is the same thing as saying that expenses have increased relative to gross income. Since losses on assets have tended downward, the mounting expenses alone may have been the cause of decreasing net profits on earning assets.

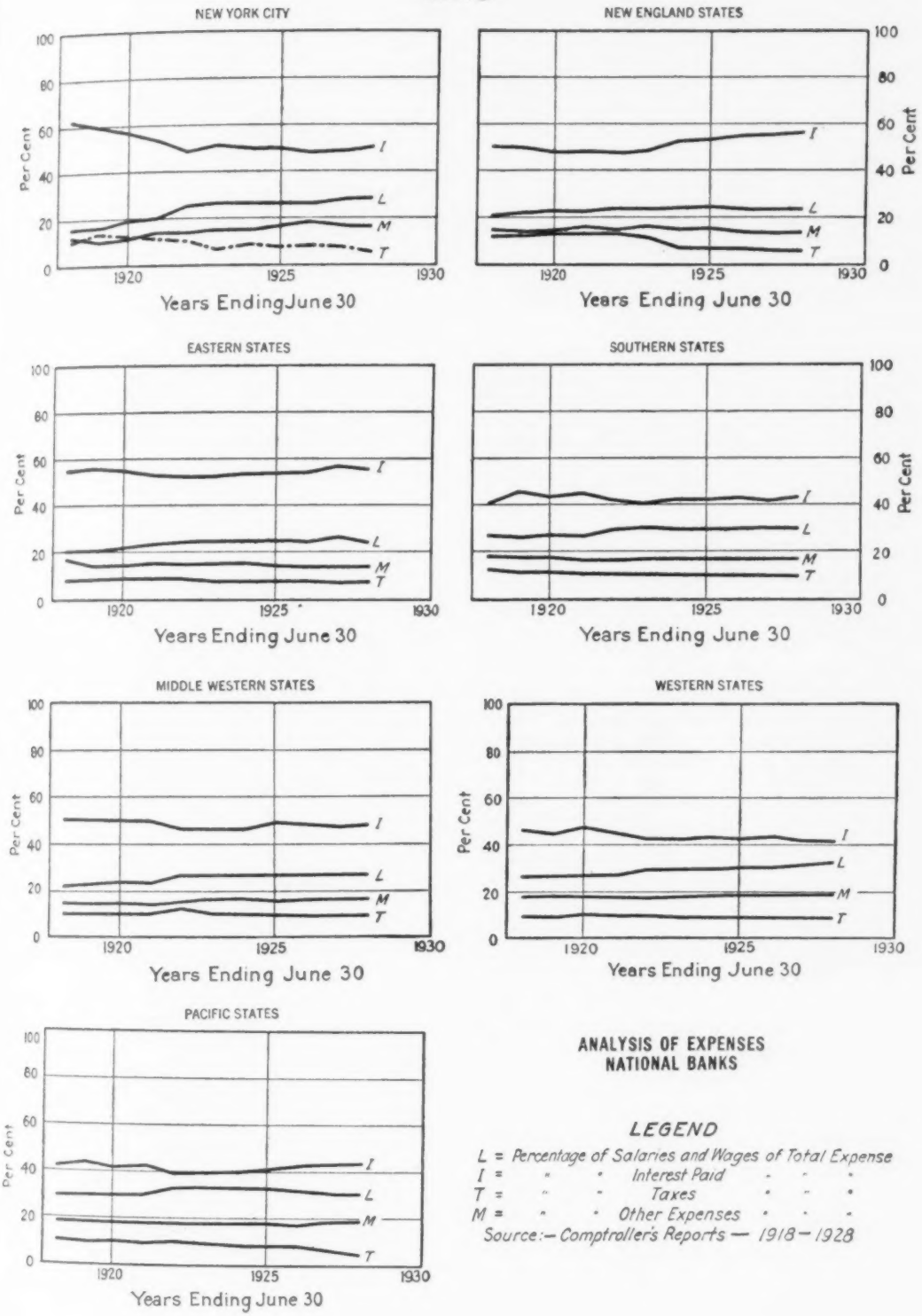
"Taxes" have been decreasing relative to total expense. During the War they were abnormally high because of the excess-profits tax. Since then, the decline has been relative to mounting total expenses, for taxes have remained roughly constant.

"Other expenses" have increased in three districts, while in the other four the trend has been in the opposite direction. No information is available concerning the nature of this item. Non-uniform accounting classifications, together with the fact that the item is residual in nature, render analysis without significance.

"Interest paid" has been decreasing slightly in relation to total expense in

[16] Chart 3.

Chart 5



ANALYSIS OF EXPENSES
NATIONAL BANKS

LEGEND

L = Percentage of Salaries and Wages of Total Expense
I = " " Interest Paid " " "
T = " " Taxes " " "
M = " " Other Expenses " " "

Source:— Comptroller's Reports — 1918—1928

New York City, Eastern, Middle Western, and Western states. In New England, Southern, and Pacific states interest paid has been increasing relatively to total expenses. But even where this expense has been relatively decreasing, the trend has not been nearly so marked as the trend in total expense itself in relation to earning assets.[17] Therefore the rate of interest paid on deposits has been increasing.

This is the result of two factors. The proportion of time to demand deposits has increased.[18] This proportion is not entirely within the control of bankers. Interest rates paid, both on time and checking deposits, have been increasing.[19] In turn, this increase is caused by competition among banks in bidding for attractive accounts.

In every region "salaries and wages" have shown a discouraging upward movement.[20] Since a division of this item into departments is unobtainable, the weights of different causes cannot be ascertained. These causes can be discussed, however. Undoubtedly accounting and tellers' salaries and wages can be cut by the introduction of modern business and bookkeeping machines. For example, an accounting machine can replace as many as eight clerks.

Recent years have seen the growth of the extension of free services, such as investment advice, personal services, general financial information (such as weekly letters), and industrial departments. The major expense of these services is salaries and wages. These accommodations have been extended in the efforts to gain desirable customers. This is again the result of severe competition.

To summarize, interest paid has increased partly as the result of mounting time deposits. Control of this trend does not rest entirely with the bankers. Wages and salaries have been increasing, partly because of unprogressive methods of administration. But both expenses have increased because of severe competition.

Competition has become more intense for two reasons. First, there are too many banks and too few bankers. It is too easy to start a bank, for fixed assets needed are few and capital requirements are low. For instance, only $25,000 capital is necessary to start a national bank. There are no legal requirements as to the banking ability of the sponsors. Except in a few states,[21] there is no restriction concerning the economic need for more banks in the given locality. There are 14 banks in Topeka, Kansas, a town of 70,000 population. Legislation concerning the starting of uneconomically small banks, banks with incompetent backing, and banks for which there is no economic need, is in an embryonic stage. Such legislation is needed and probably may be expected in the future.

Second, most banks are ignorant of their costs of doing business and consequently have little conception of the profitableness of the services they extend. Lack of uniform accounting practices and standard cost figures, which are available to many other businesses, has made cost analysis seemingly without value. Analyses of individual accounts to determine the cost of excessive activity and unfavor-

[17] Compare with trends in Chart 3.
[18] Table I.
[19] N. A. Pattillo, *Op. cit.*, p. 216.
[20] Chart 5.

[21] Particularly Iowa and Wisconsin. See *The Causes of Bank Failures and Some Suggested Remedies*, Federal Reserve Bank of Boston, pp. 7 and 9.

able float balances have not generally been undertaken.

Now, competition is healthy when it is not cutthroat, that is, when it does not reduce profits below satisfactory levels. From the standpoint of borrowers, it may lower their banking costs. But, on the other hand, it reduces the safety of their funds through weakening the position of the depositaries. Irrational competition of this sort should be stopped before failures automatically correct the situation. An analysis leading to a realization of costs will go far by reducing the willingness of bankers to indulge in such competition. In addition, since competition is mainly local in character, a logical way of reducing it is by the cooperation of competitive banks through their clearing-house associations.

Gross income of banks may be increased by the extension of paying forms of financial service. Losses may be decreased by a reduction of local loans and by more competent selection of each line of credit. Expenses may be reduced by gaining more information about them in order that pressure may be intelligently applied, and by the easing of competition through its rationalization and through clearing-house agreements. Thus will interest paid and costs of wages and salaries be reduced.

Chain and Branch Banking

So far, methods of increasing profits have been presented from the standpoint of each individual bank. Another method that has been making progress in practice is chain and branch banking.[22]

[22] For the purpose of analysis of profits, there is little difference between chain and branch banking. In the following discussion, the terms will be used interchangeably.

Four fundamental causes of decreasing profits of commercial banks have been brought out: a relatively lessened demand for bank loans, caused by lessened economic need through industrial firms' funding their current liabilities and through competition of government-sponsored agencies in furnishing agricultural credit; poor loan administration, resulting in losses on local loans; unscientific administration in respect to necessary expenses; and more severe competition among banks. How will chain banking affect these causes of declining profits?

Chain banking obviously can have little effect on the lessened demand for loans. It has been asserted that industry prefers local banks and will choose such banks in competition with chain banks. The growth of chain banks in Europe, Canada, the Northwest, and in California[23] does not back up this argument. Chains in some localities can secure deposits more easily than local banks, because local bank failures have lessened public confidence in local financial institutions.[24]

Effective diversification of local loans may be achieved by chain banks. The result of this diversification is the stabilization of losses and earnings. But over a period of years this does not affect the ratio of loan losses to earning assets; it affects the amplitude of cyclical variation only.

Chain banks will enjoy the advantage of uniform accounting for their branches. The comparisons thus made possible will clearly show where costs of certain branches need to be reduced.

[23] R. S. Hecht, "The Great Web of Chain Banking," *American Bankers' Association Journal*, October, 1929, p. 307. See also George S. Mumford, "The Concentration of Banking Resources," HARVARD BUSINESS REVIEW, January, 1930.

[24] Experience of Northwest Bancorporation in Northwest.

Various services, such as those of a statistical department, will cost less, for one department will serve many branches. On the other hand, there will be the additional expense of maintaining the central executive office. During early years, organization and "adjustment" expenses will be high. Costs will not be reduced materially at least in early years.

Whether competition will be intensified by branch banking is a moot question. To the extent that branch banks will bid for new business it will be intensified, but to the extent that chain banks will indulge in rational competition only, it will be lessened.

Resources may be better utilized by chains, for idle funds of one branch may be shifted to another where credit is in demand. Furthermore, larger capital will increase the amount of credit that may be extended to any one borrower.

In brief, chains may obtain deposits and make loans more easily than local banks. Diversification will be increased. Costs will not be reduced materially. Destructive competition will be lessened if these chains are willing to cooperate. Only in respect to utilization and investment of resources are chains distinctly at an advantage. And it would be years before the benefits of this advantage would render these chains distinctly superior to unit banks.

Then why have they been successful? Why are they growing so fast? The answer in all likelihood is to be found in better management, both in discernment of important tasks and in their intelligent accomplishment.

This discussion of profits and operations of unit and chain banks has brought out problems of banking practice and has indicated ways in which bankers may solve them where it is in their power to do so. It is probable that chain banks are in no peculiarly advantageous position. Therefore success in solving the problem of banking profits of unit banks and the maintenance of their position against the chain organizations, will call not for new forms of organization but for a higher order of executive ability.

INDUSTRY AND THE AGED

By ROBERT HOWE

THE attention of the business man, along with that of the legislator and the social worker, is being focused with increasing emphasis upon the growing necessity of care for the destitute aged. The problem is not hard to discern, and the ramifications of its social aspects appear limitless. But industry has had difficulty in defining its relationship to the problem as a whole, and industrial leaders are curious regarding the nature and effects of probable developments in the near future.

At the present time there are nearly two million people over sixty-five years of age in the United States who cannot support themselves at a subsistence level. The importance of the present problem is being constantly intensified, calling for immediate organized efforts toward a solution. The number of older people in this country both absolutely and proportionately is steadily increasing, whereas the proportion of older workers gainfully employed is steadily decreasing. These two factors working upon our increasing population may be expected to double the present problem within the next hundred years.

Industry's Recognition of the Problem

Industry recognizes its relationship with the present problem and its growing import. While modern hygiene has increased the number of old persons, modern industry has become less inclined to use them. Emphasis is being placed more and more upon youth in preference to the older worker, and to such a degree that the past year has witnessed "dead-lines" for new employees drawn before the thirties are reached, and "dead-lines" after which workers will no longer be retained in the early forties. This dilemma for the worker of advancing age may be attributed to several causes.

Due to machinery, there is a decreasing value of the older worker's skill and experience, youth better adapting itself to the constant changes which dynamic industry imposes upon the employer. Retention of older employees often means the retention of direct liabilities that impair efficiency, and the employer's liability regarding accident, sickness, *etc.*, is decreased by the elimination of old workers.

On the other hand, there has been a growing realization on the part of industry that the situation cannot be ignored. From a purely ethical standpoint, the humane employer dislikes the idea of turning out the employee who has grown old in his service. As a matter of good business, despite the advisability of eliminating company liabilities, industry recognizes that the policy of discharging old employees has a demoralizing effect on the morale of the labor force, and that it is questionable business policy to flaunt the practice in the face of humane society and organized labor. Aside from such negative reasons, industry has found it wise to meet the situation by positive action. Some companies, spurred by a sense of justice, have been prompted to reward workers for long and faithful service. Other companies have frankly capitalized the worker's fear of desti-

tute old age and have adapted remedial steps primarily for "business" purposes, seeking thereby to reduce labor turnover, to increase labor morale and efficiency, to eliminate labor disputes, automatically to eliminate the superannuated employee, and, by the threat of withdrawing this promised aid, to discourage personal misbehavior, dishonesty, *etc.*, among the labor force. Numerous though the reasons are, the fact remains that industry has in many ways shouldered the problem.

In some instances companies have reduced the problem to a minimum by analyzing their labor force individually from time to time and rearranging the assignment of workers according to the capabilities of their advancing age. This plan does in a single company what some students advocate as a partial solution to the whole problem, *i.e.*, the creation of industries where "veterans" can still be usefully employed. An intelligent application of this plan in a company offers a means of getting the greatest utility from its laborers up to a given age, possibly sixty-five. But this age is recognized as one after which the worker's usefulness begins a marked decline; not only do his efforts then become useless but his retention as an employee is inadvisable, and a more direct means is necessary to prevent a destitute old age.

Industrial Pension Systems

Pensions, as industry's solution to the problem, were initiated in this country as early as 1884. Since that time, especially in the last twenty years, pension systems have been adopted widely until at the present time there are approximately five hundred working plans now in existence in the United States. The study of pensions as such involves an analysis of the various industrial plans, because each has characteristics peculiar to itself. And a study of pensions with regard to their effect upon the operations of the company offers some indications that, as a whole, such plans have not produced expected results. Regardless of the type of plans or of their value to the operations of a particular company in which they are employed, however, experience in general has shown that pensions have not provided, and in all probability will not provide, a satisfactory means of eliminating destitution due to old age.

There are marked exceptions to such a broad statement, and many systems have resulted in much good, but experience has been sufficient to prove that a fundamental solution to the major problem does not lie in industrial old-age pensions. The informal and the discretionary, or non-contractual, types of pension plans are quite obviously a poor insurance for old age. They are subject to the double weakness of being dependent not only on the health and continuous life of the company which operates it but also upon the willingness of that company to maintain the policy. Expressed in the words of the Carnegie Foundation report on the subject, "A pension which is not founded on a legally enforcible contract represents a hope and not a dependable support in old age."

Numerous weaknesses are apparent in contractual pension plans also. In the first place, the proportion of companies employing pension plans is relatively small and is limited to those stronger industrials that can afford to assume such a burden. The number of workers benefited is consequently a small number of the total in need of help. Despite a slackening in the

movement toward industrial pension plans since 1916, the number will undoubtedly continue to increase, but even if pensions should be adopted universally the situation would not be satisfactory. To the marginal industrials it would mean one of three things:

(1) They will be forced below the margin into unprofitable operations.

(2) Payment of pensions as "deferred wages."

(3) Passing the burden to the consumer. In this case society would be paying the pension without deriving the benefits of a recognized socially administered system.

In addition, the provisions of the various industrial plans vary widely. Because there is necessarily a complete lack of uniformity among the many companies, similar workmen for the same effort bear unequal burdens and will receive unequal compensation. Lastly, and very important, is the fact that the pension plans of necessity benefit only those laborers who have a long uninterrupted service in the employ of the pensioning firm, usually twenty years. Any other system would prove unbearably expensive, extremely difficult for sound financing, and would in reality be chiefly a charitable function on the part of the firm. Necessary and valuable though the service feature is to the company, this proviso limits the benefits of the plan to less than 4% of all male industrial workers and to less than 3% of the women workers.[1] The percentage of those who remain continuously in the employ of single companies will undoubtedly tend to increase, but the fact remains that the number of workers actually benefited is extremely small and that a successful solution by this method must necessarily take from the worker his freedom of choice and independent action regarding his work.

Even in the case of those workers who have served the required period in a company operating a plan, industry has not proved itself a sound agency on which laborers can rely with implicit confidence. Exhaustive studies[2] have indicated that the history of pension plans has been a record of mistakes or failures, and that in the United States today there are very few schemes so financed that they are likely to remain solvent without refinancing or modification.

This fact is due to one or more of several causes: superficial analysis of the complications at first, failure to fund accruing liabilities on an actuarial basis, inability closely to estimate future liabilities or constantly increasing liabilities which in turn are due to a growth in the labor force, a universal decrease in labor turnover, and higher wages and salaries which are commonly the basis for determining the pension amounts. Many companies have refused to adopt pensions because of the realization that payments must eventually become such that the plan will place it at a serious competitive disadvantage with companies not assuming a like burden.

Industry has not been the last to recognize weaknesses in pension schemes, and current trends are tending to rectify past mistakes. To offset the element of increasing cost inherent in a scheme of pensions, there has been a noticeable tendency in the last few years for companies to adopt the con-

[1] *Report of Pennsylvania Commission on Old Age Pensions*, January, 1927, p. 7.

[2] Special Committee on Industrial Pensions of the Merchants' Association of New York, Luther Conant, Jr., *A Critical Analysis of Industrial Pension Systems;* Murray W. Latimer, *The Lesson of Industrial Pensions.*

tributory principle which, in addition to decreasing the company's share of the burden, offers other beneficial features: the principle of "self help" is sound and desirable and brings the lesson of thrift home to the worker, it can provide larger annuities, it gives financial stability through the necessity for formal, adequate funding of liabilities, and it does not discourage efficiency, a charge often made against a gratuitous plan.

Industry has still further strengthened its pension systems in some cases by providing for their administration through insurance companies. This policy assures to the worker amounts paid in by freeing the plan from the uncertainties of changing company policies and from the dangers that might befall the individual company. In a less direct manner, many companies have encouraged thrift to provide for old age by operating thrift and savings plans for their workers or by stock-purchasing plans. Some are even operating investment trusts for the benefit of their workers.

Government Pension Schemes

But despite the commendable efforts on the part of industrial leaders, the problem of the destitute aged in general is but little affected. These plans are all necessarily built around the individual company, which is not the administrative unit upon which to found a permanent and comprehensive program against old-age dependency. Even if a system of providing for the aged were in vogue in every company in this country, the weaknesses of individual company administrations are glaring enough to prove that it is not the correct manner of attack. A multitude of small administrative units involves duplications, inefficiencies, and wide variations. Moreover, companies will continue to fail, and industries will continue to decay, mergers will continue to disrupt existing plans, and highly seasonal companies cannot care for their seasonal workers. And outside of industry there is a mass of workers who will have no organized provision whatsoever: the destitute farmer, domestic servant, or musician will be dependent on disorganized private charity or on the dispensation of state and municipal alms.

As for what developments may be expected in the future, in view of the increasing importance of the problem and in the light of past failure to find a fundamental solution to the problem in this country, it appears inevitable that the State will take definite action, either in the form of old-age pensions or of compulsory insurance. By so doing the United States will merely be following an example set by practically every country of the civilized world, thirty-eight foreign countries having established some form of a national system for public relief to certain classes of wage earners. Unless we devise a hitherto undeveloped solution, the trend of world action points to a similar course in this country.

The idea is not at all new in this country; since 1907, forty-seven bills providing for public pensions have been introduced in Congress, and though none has even been reported out of committee, agitation for national recognition is constantly increasing. President Hoover has publicly recognized the issue as one which may soon merit federal action.

The trend among state legislatures indicates that industry in all states may ultimately expect a state solution to the problem. Ten states now have

pension laws, thirteen states have recently appointed commissions to investigate old-age dependency, and bills aiming either at immediate establishment of public pension systems or at the appointment of commissions to report upon the desirability of such action were introduced at the 1929 session of twenty-eight state legislatures. Many religious and social agencies are championing the furtherance of state action, and the American Federation of Labor has ceased agitation for industrial pension schemes in anticipation of a legislative solution.

The future holds some interesting developments before a working solution can be perfected; the advisability of state *versus* federal legislation, contributory *versus* gratuitous plans, and state administration *versus* administration by private companies in the event of compulsory insurance, are questions which must be worked out. But aside from detail, industry must face the fact that governmental agencies are very likely to assume the burden of care for worn-out workers. Disregarding the social aspect of this development, business must analyze its effects on the American corporation and must take a stand on its merits or demerits as a business proposition.

Effect on Labor Turnover and Efficiency

Industry's first concern will be the effect on the labor force. Regarding turnover, under a state provision for old age, it may appear that the worker will be stripped of any feeling of necessity for continuous employment and will tend to move about more freely from company to company. But this would be true only in isolated cases; an increased labor turnover would be largely limited to that group of laborers who are now working in a company with an established pension system and who desire a change, but who remain because of the assurance of a degree of care in old age. In such cases the ability of the dissatisfied worker to better suit himself to his working conditions will prove advantageous to both employer and employee. Among laborers as a class the effect on turnover will be negligible. The prospect of living within a pension income is not attractive enough to influence any but those entirely devoid of any ambition, those who are accustomed to the lowest scale of living, and those who find themselves utterly destitute. At best a social pension can support only at a subsistence level, and, though this is sufficient to eliminate pauperism and to remove the fear of the trip "over the hill," it is not a sufficient incentive to cause American workmen to anticipate such an existence.

There are other indications that industry need fear no increase in labor turnover. For the younger class of workers, the prospect of old-age dependency appears too remote to be of much influence. Under any conditions youth will tend to move about, dictated by personal reasons rather than by the prospect of a meager income 30 or 40 years later. This would remain true if the state administered pensions, if the company operated systems, or if there were no such schemes at all. As for the older worker, certain influences which tend to keep him in the employ of a single company would continue to operate. As the worker grows older he becomes more settled in his job and is naturally less inclined to move. Unless he is dissatisfied, he hesitates to break the contacts of past years to start anew under strange surroundings. Furthermore, he finds it increasingly

difficult to obtain new employment, so that he will not hazard the loss of his present assured job.

The one possibility that labor turnover will increase under a state provision for aged dependency, will arise from a condition advantageous to industry and to labor. Those employers who have stopped employing older workers because they must minimize the expense of a company-operated plan, or because they have no pension plan and dislike the idea of turning out old people with no provision for their welfare, will find it possible to utilize old workers without assuming a financial or moral obligation when the worker becomes superannuated. This condition will be limited to those companies which desire workers of mature years.

The effect of state action on labor efficiency is difficult to measure. On the one hand, there is the charge that such a scheme will foster indolence among workers by removing the necessity of providing for the future. But this charge may be confined to such a narrow group of workers that its effect is practically negligible. In the first place, it applies only to that extreme type of worker who finds a meager pension sufficient to provide all the desired "comforts" of old age. In the second place, only the worker above the pension age (65 or 70 years) will be so affected by a pension that his efficiency is apt to decline because of it. The worker below the required age must hold his job to provide the necessities of life; the efficiency of the worker of qualifying age is already declining for numerous other reasons. It appears, consequently, that the effects of a pension detrimental to labor's efficiency is limited to the lowest-paid and consequently least valuable worker who has already reached an inefficient age.

On the other hand, it may be stated with equal force that labor efficiency will be increased. Much progress has been made in determining the effect of mental fatigue on the worker; thoughts alien to the work in hand are doubtless material influences on a worker's efficiency. The fear of destitution, especially among the aging workers who have no children on whom to rely, is probably one of the most depressing influences and consequently one of the greatest hindrances to maximum efficiency. The removal of this fear would be decidedly to industry's advantage. To a certain degree, state pensions might achieve the desired result; the stark fear of pauperism would be removed, but, again, few workers can be quite unperturbed at the thought of aged existence on an income from social pensions. Briefly, therefore, industry need not look for much effect, either beneficial or detrimental, on the efficiency of labor as a result of impending state action to prevent destitution of the aged.

Distribution of the Financial Burden

Industry is particularly interested in its relation to the financial burden of a governmental scheme. Under certain schemes administered by foreign countries, notably England, employer and employee contribute directly to the pension fund. Under other plans, the Government assumes the entire burden. In this country, the trend among state plans divides the burden between the state and the county. Whatever the form of compensation or the details of administration, however, industry realizes that either directly or indirectly it must bear its share of the financial burden in the form of taxes.

Naturally enough the industrial manager has an instinctive aversion to any increase in taxes, and the immediate reaction will be opposition to any measure that might cause a higher tax level. In the first place, the return on a tax for a pension scheme will be hard to discern. If the employer recognizes no obligation for the older worker and considers his responsibility to the worker ended when the weekly wage has been paid, he will be unable to see the justice for the imposition of the burden.

In the second place, there is the possibility that increased taxes will lead to injustices; if based on income, some industrial units will be required to bear the burden belonging to other units; if based on the size of labor force, a further premium will be based on machinery, although a tax would in reality merely force a "depreciation" charge on labor. An equitable plan might be based on a combination of the number of men employed and the percentage of workers which the industry has in the past left dependent in old age. Whatever the details of the plan, industry is solely interested in the assurance that the tax burden will be universal and proportionate. This being the case, industry need not further concern itself unnecessarily with this phase of the problem. The level of operating expenses will rise universally, competitive advantages and disadvantages will remain unchanged, and the burden will ultimately be shifted to the consumer society.[3] The exception will be in the variances of schemes, administrative detail, expense, scope, *etc.*, as adopted among the several states. For this reason it is to the advantage of industry as a whole that action be taken through the federal government to avoid inequalities of varying state laws such as have already been witnessed in labor regulations and compensation acts.

[3] This principle already applies to railroad operated pension schemes; the Interstate Commerce Commission recognizes that the charge for pensions must ultimately be borne by the public. Pension charges are recognized as operating expenses, not to be deducted from the road's permissible return on investment.

Effect on Existing Pension Plans

Those companies which now operate industrial pension plans are concerned regarding the effect of governmental action on their established schemes. The immediate effect will depend somewhat on the type of provision adopted by the government; a gratuitous plan will limit the beneficiaries to the absolutely destitute and will be of an amount approximately equal to what industrial plans can now afford to pay the type of employee that is apt to be destitute at old age. If industry were to continue to pension this class of worker, it would merely be assuming an added burden without benefiting the worker, because the state would not provide pensions to those with any other means of subsistence.

As a matter of fact, under any governmentally administered scheme, the effect on existing industrial pensions will be extremely small. A company might be justified in refusing to assume the state's burden of care for the most destitute, but if existing plans were discontinued there would remain an injustice to the worker, who has managed to accumulate a little property and who would be unaffected by gratuitous government pensions. In many companies, pensions to executives are administered so as automatically to eliminate the costly mistakes of judgment and policy often attendant on advancing age. Obvi-

ously a governmental scheme would not affect such a level of pensions, and the same principle applies in a smaller way to the better-paid laborers. The purpose of such a pension is not so much to prevent dependency as to provide a reward for service and at the same time to provide a means whereby the company can gracefully retire the superannuated members of its personnel before their mistakes prove too costly.

One of the current formulae for national prosperity is based on an ever-increasing purchasing power among laborers—the more that is spent the greater will be the return to everyone concerned. If a state-administered system should discourage savings and should direct that added purchasing power into the market, and at the same time should provide business with two million new customers, industry would be quick to organize its support for the plan. But such is not the case. Savings for old age will be discouraged only to a minor extent; pensions will apply chiefly to the worker whose income does not permit a saving, to those who have lost their savings through some misfortune, and to those who would not save anyway. In none of these cases would additional purchasing power be put into the market as a result of government pensions. In a compulsory insurance plan, purchasing power would be taken out of the market by forced savings. But under either system, the purchasing power of the beneficiaries would be increased only through a decrease in some other source, either in the form of taxation or in the form of insurance premiums. The one apparent effect on the market would be that the expense of administration, estimated at about three quarters of a billion dollars, would be diverted from those who would put it in the market for luxury goods to the market for necessities required by the aged for their subsistence.

Conclusion

In conclusion, a résumé of industry's relation to the problem of care for the army of destitute and dependent old people now living in the United States indicates three phases concerning which industry should recognize its position. In the first place, although much of the problem arises from conditions with which industry has no connection whatsoever, industry's constant endeavor to install more machines which require fewer laborers, especially experienced laborers, is a contributing factor of major importance. Secondly, despite numerous commendable efforts, industry as a whole has not provided any effective solution to the problem; and the individual industrial concern is not the unit around which to build an efficient and effective system to eliminate old-age dependency.

In the third place, from a cold-blooded view-point of practical value to the business man, a scheme of social care for the dependent aged offers little of either advantage or disadvantage; practical reasons will neither acclaim nor condemn the principle.

Finally, therefore, the inference is that industry should not oppose a practical social scheme that will provide an income for the aged and destitute worker, and that industry's support for such a scheme will be based on social reasons, the degree to which it recognizes an obligation of care for worn-out workers.

TRENDS IN THE WHOLESALE GROCERY TRADE IN SAN FRANCISCO

By EWALD T. GRETHER

THE rapidity of change in the distribution of food products has created problems of extraordinary interest in this field. The purpose of this paper is to summarize the results of an investigation of the wholesale trade in groceries in San Francisco during the years January 1, 1900, to January 1, 1930. Similar studies in other parts of the United States would contribute materially to our knowledge of the status of wholesaling.

The analysis of the tendencies in the San Francisco market is peculiarly pertinent, because the trade sentiment on the Pacific coast has been that the San Francisco wholesale grocers were particularly well entrenched. In addition, there has been a steady, conservative increase in the population of the city and of the surrounding territory since 1900 which has provided the basis for normal growth, without the introduction of an excessive boom or panic factor. The detailed aspects of the study are limited to the city of San Francisco.

Classification and General Trends

It was difficult to develop a classification of wholesale enterprises which would be useful throughout the entire period since 1900. The following classification was employed:

Class I. General-line, service enterprises: Strictly wholesale, maintaining warehouses, selling to retailers, carrying a line of grocery items, and offering selling, delivery and credit services.

Class II. Narrow-line, service establishments: Strictly wholesale, maintaining warehouses, selling to retailers, offering selling, delivery and credit services, but carrying a narrow line of grocery items.

Class III. Miscellaneous specialty service enterprises: Not strictly wholesale; includes a heterogeneous class of houses which either specialize in bakery, hotel, restaurant, ship, railroad, or other institutional business or carry only Italian food specialties.[1]

Class IV. Narrow-line, non-service enterprises: Strictly wholesale, maintaining warehouses, selling to retailers, stocks limited to staple items, and selling on a cash-and-carry basis.

Class V. Cooperative wholesale enterprises.

The above classification is useful in tracing the general trends throughout the entire thirty years. However, so many changes have occurred in trade structure and in merchandising methods since the war period as to make a new classification necessary for future analysis. Table I shows the annual distribution of enterprises by classes since 1900.

Certain of the general aspects of the trend are shown quite clearly by the tables. Table II particularly assists in disclosing a perspective of the movement within the five classes. The following general tendencies are indicated:

1. The increase in the number of full-line, service establishments during the

[1] General-line, narrow-line and specialty houses may be segregated with considerable precision. A general-line establishment carries more than 2,000 items, including different grades and sizes, a narrow-line enterprise carries approximately 2,000 to 1,000 items, and a specialty firm ranges below 1,000 items.

early period culminating in 1912, when there were 12 houses in this class. Following the war period the number of houses in this class began to decline until only four firms remain.

TABLE I. NUMBER OF WHOLESALE GROCERY ENTERPRISES IN EACH CLASS IN SAN FRANCISCO, JAN. 1, 1900, TO JAN. 1, 1930[2]

Year	General-Line, Service	Narrow-Line, Service	Specialty Service	Cash-&-Carry	Cooperative	Total
1900	9	6	23	.....	.....	38
1901	9	7	23	.....	.....	39
1902	9	5	16	.....	1	31
1903	9	6	16	.....	1	32
1904	9	6	18	.....	1	34
1905	9	6	18	.....	1	34
1906	10	7	20	.....	1	38
1907	10	7	26	.....	1	44
1908	10	7	27	.....	1	45
1909	10	7	25	.....	1	43
1910	10	7	28	.....	1	46
1911	10	8	25	.....	1	44
1912	12	7	27	.....	1	47
1913	12	7	27	.....	1	47
1914	12	8	32	.....	1	53
1915	12	8	29	.....	1	50
1916	12	8	31	.....	1	52
1917	12	6	32	.....	1	51
1918	12	4	36	.....	3	55
1919	12	4	31	.....	3	50
1920	10	5	34	.....	3	52
1921	10	7	31	.....	4	52
1922	9	7	30	.....	4	50
1923	9	7	31	.....	4	51
1924	9	7	35	.....	4	55
1925	9	5	30	.....	4	48
1926	7	5	25	1	4	42
1927	7	7	32	3	4	53
1928	6	6	32	3	4	51
1929	6	6	32	3	4	51
1930	4	4	31	3	4	46

[2] The above annual enumeration was derived in a variety of ways. It was found that the listings of firms in the directories and registers such as the *Register of Wholesale Grocers*, of the Thomas Publishing Company, were not sufficiently accurate to allow their use. These general sources were checked through interviews with members of the trade, particularly by interviews with the members of the firms involved, when feasible. The enumeration in Table I does not at all agree with that of the United States Department of Commerce in the sample Census of Distribution made in San Francisco to show 1926 conditions. The census enumeration shows 267 wholesale grocery establishments in San Francisco in 1926. The difference between the 42 enterprises enumerated in Table I and the census figure is due to the inclusion of the following types in the wholesale class by the census agents: (1) delicatessen houses, (2) small retail-wholesale firms, (3) brokers, sales agents and commission merchants, (4) exporters. There is reason, too, to doubt the accuracy of the Department of Commerce census. It seems dubious to expect investigators to achieve proper accuracy when they are paid 25¢ per schedule and earn only $4.00 to $5.00 per day. It is to be hoped that in the 1930 census of distribution the classifications were more detailed, and the investigators better qualified for their work.

It should be noted that this study includes only those enterprises that assume title to goods, and hence excludes brokers and sales agents. The number of brokers and sales agents listed in San Francisco has been declining in a decided fashion in the last ten years. In 1920, for instance, the Thomas *Register of Wholesale Grocers* listed 218 food brokers, in 1925 only 127 firms remained, and in 1929 the list was reduced to 99.

2. The number of houses in the narrow-line, service class follows the general trend in Class I. However, the movement is not entirely a parallel one.

3. The number of specialty-service firms fluctuates widely over short periods. There was a gradual increase in the number of houses from 1900 throughout the war period. Since 1919, the number of enterprises has remained relatively the same.

4. Cash-and-carry houses were not incorporated into the trade structure until 1925 and have gradually increased since that date.

5. A cooperative wholesale group appeared in 1901. However, the most significant group development did not appear until the war period.

Histories of Particular Enterprises

So much may be deduced from the tabular presentations. The more interesting and pertinent information is contained in the history of the individual enterprises that have entered and survived or that have disappeared from the trade during this period.

Attention must be focused in the main upon the full-line service wholesalers. The story of the rise and decline of these powerful houses reflects clearly the introduction of the factors that have produced an upheaval within the trade. The century opened with nine large houses of this class; in 1914 there were twelve. During the period from 1900 to 1914, four firms had entered this class and only one had gone out of business: in 1902, the death of the original owner led to the retirement of one firm after thirty years of operation. The large general-line houses dominated the wholesale grocery business from 1900 until well through the war period.

Yet today only four of the original firms still survive as wholesale grocers. No other firms have entered this class to replace those who have gone. All of the four surviving houses have made such radical adaptations to new conditions as to make them appear to be a new distinct type, instead of the old firms whose names they still bear.

seven years of more or less futile effort to obtain an adequate volume was forced to retire; the parent firm still operates in the Sacramento area. In 1921 another large firm liquidated after fifteen years of activity. The year 1926 opened with two of the oldest and largest firms missing. One of these houses had been in operation for

TABLE II. NUMBER OF ENTERPRISES ENTERING AND LEAVING WHOLESALE GROCERY BUSINESS IN SAN FRANCISCO, JANUARY 1, 1900, TO JANUARY 1, 1930[3]

Year	I General-Line Service		II Narrow-Line Service		III Specialty Service		IV Cash-and-Carry		V Cooperative	
	Entering	Leaving	Entering	Leaving	Entering	Leaving	Entering	Leaving	Entering	Leaving
1900	...	...	1	...	1	1				
1901	...	...	...	2	...	7	...	...	1	
1902	1	1	1	...	3	3				
1903	...	...	...	...	5	3				
1904	...	...	...	...	2	2				
1905	1	...	1	...	3	1				
1906	...	...	...	...	15	9				
1907	...	...	...	...	2	1				
1908	...	...	...	...	1	3				
1909	...	...	...	...	4	1				
1910	...	...	1	...	3	6				
1911	2	...	...	1	4	2				
1912	...	...	1	...	1	1				
1913	...	...	...	...	8	3				
1914	...	...	...	...	1	4				
1915	...	...	2	2	5	4				
1916	...	...	...	2	5	3				
1917	...	...	...	2	7	3	...	...	2	
1918	...	...	1	1	5	10				
1919	...	2	1	...	9	6				
1920	...	...	2	...	2	5	...	...	1	
1921	...	1	1	1	1	2	...	...	1	1
1922	...	...	...	...	2	1				
1923	...	...	...	...	5	1				
1924	...	...	...	2	2	7				
1925	...	2	1	1	3	8	1			
1926	...	...	2	...	7	...	2			
1927	...	1	...	1	1	1	1	1		
1928										
1929	...	2	1	3	5	6				
Total	4	9	16	18	112	104	4	1	5	1

[3] Entering and leaving refers both to the shifting between classes of business as well as to the entering or the going out of business. Several firms, for instance, have shifted from Classes I and II to Class III. Leaving business is not to be interpreted as representing business failures. Commonly, the larger firms liquidated while still showing some profits. There is probably a slight element of error in both Table I and Table II due to the difficulty of knowing just when a firm had changed its form and policies sufficiently to make it necessary to shift it into another category. Since this element of error is eliminated throughout a time period of several years it is best to focus attention upon the years 1900, 1914, and 1930 for purposes of comparison.

From 1914 to the present time, no new firms entered the general-line type of business. However, eight firms retired during this period. Two houses closed their doors in 1919, one of these having been in business since 1896. The other house was a branch of a Sacramento firm; it had entered the San Francisco market in 1912 and after

forty-five years and was one of the largest wholesale establishments on the Pacific Coast. The other firm was forty years old and had been an important factor in the market. The departure of a firm each in 1927 and in 1929 reduced the list of survivors to five. Of the five, one went through a receivership at the beginning of the year and

after considerable slashing of inventories is attempting to re-establish itself by sponsoring a voluntary chain. Due to this readjustment, this firm was transferred to Class II in Tables I and II.

It is interesting to note that all of the firms except one retired before actual failure. The reasons for liquidating were: (1) the increasing severity of competition, as evidenced by the carrying of many staples at a loss, (2) the necessity of making radical readjustments to meet the changed conditions brought about by the entrance of the buying groups and chains. Of the firms that retired, one went into coffee roasting, another into salmon packing and a subsidiary of a third still sells bakery specialties.

The history of the narrow-line, service establishments need not be told in detail since it is essentially similar to that of their larger kin. The competitive difficulties forcing adjustments in the service field affected these smaller firms as keenly as the large houses. One of the six firms in this class at the beginning of 1929 was in a unique position. It had the distinction of being the only wholesale house in San Francisco on the old service basis, and without private brands or contractual retail connections. It had built its business about a nationally advertised line of canned fruits and vegetables during a period when other firms did not push this line. The new buying groups and the cash-and-carry houses, however, began to cut into this business so that this firm closed its doors in 1929. One of the four firms remaining in 1930 is affiliated with a semi-cooperative buying group, and two others have promoted voluntary merchandising groups. The fourth firm is a branch of a large Chicago manufacturing wholesale house and sells only its own brands. Although it was desirable to segregate these medium-size establishments in the analysis, there is no peculiar significance to be attached to this group as a whole. There are no tendencies here that cannot be seen in greater clarity in connection with the Class I analysis.

The specialty-service enterprises continue to remain a factor in the total situation. Apparently, specializing in institutional trade or in Italian food items (San Francisco has a large Italian population) allows a large number of small firms to survive. However, the majority of these firms are very small and relatively impermanent. Table II indicates the rapid turnover of firms in this class. It is difficult to obtain an entirely accurate account of the shifts in this group of firms, due to the complications of the exporting and importing business. The significant point is that these small specialty houses offer no indication of disappearing under the blows of the new developments.

New Factors in the Situation

The outstanding intrusions into the San Francisco situation, forcing radical readjustments, have been the development of (1) cooperative retail groups, (2) cash-and-carry wholesale houses, and (3) chain-store systems. It is significant to notice that the buying groups take precedence historically, although it is commonly thought that it was the entrance of the chain-store systems which led to the upheaval in the wholesale-grocery business. Another common misconception, that cooperative buying and merchandising groups owe their impetus to chain-store competition, is not supported by the facts in the San Francisco market: the cooperative efforts of the retail

grocer had begun to force readjustments in the wholesale business before the chains had become significant factors. Table III shows the number of

TABLE III. TOTAL NUMBER OF UNITS IN GROCERY CHAINS IN SAN FRANCISCO TO JANUARY 1, 1930

Year	Number of Firms	Number of Units
1921	1	2
1922	2	11
1923	3	11
1924	4	25
1925	4	60
1926	7	144
1927	6	188
1928	8	272
1929	7	324
1930	7	361

units in grocery chains in San Francisco each year since the date of origin. Chains were of only minor significance until the year 1926 when there were 144 units. Yet major wholesale-grocery enterprises began to leave the business before that year, two firms having left in 1919, one in 1921, and two of the largest in 1925.

The buying groups played the leading rôle in these earlier readjustments. The only other serious contributing factor was the general unsettling of business in the post-war period. On January 1, 1930, there were four cooperative buying groups in San Francisco in addition to three voluntary chains sponsored by jobbers. Only the groups which may be considered as legitimately cooperative are considered in this connection, since the jobbers' voluntary chains are a current development and hence do not throw any light upon the happenings at the end of the war period. Two of the four cooperatives may be considered as of the legitimate cooperative type. These were organized by the retailers themselves, own their warehouses, and have no jobber connections. They are more than buying groups since they have added a considerable amount of concerted merchandising effort to their buying work. The third group was also a legitimate cooperative but did not maintain a warehouse and was merely a buying club. The club disbanded in January, 1930, due to lack of deposit requirements from members and to the small volume which did not provide the basis for favorable discounts from manufacturers. Members apparently found it more profitable to buy from the cash-and-carry wholesalers. The fourth cooperative should be considered as only a semi-cooperative since it was promoted by a jobber through whom purchases are made.

The significant fact historically is that both the legitimate cooperatives and the semi-cooperatives were important factors in the local market before chain systems developed. In 1918, the older legitimate cooperative had 48 member stores. In 1919, the other cooperative was organized with 82 stores. Meanwhile, the semi-cooperative had been organized, with a total of 350 stores in this region. Originally the two legitimate cooperatives bought through the regular jobbers. It became the practice on the part of all the jobbers to give the buying groups preferential discounts. Thus the competitive market became restricted for those firms that did not succeed in obtaining the business of the cooperatives. This limitation of the market at the end of the war period was the prime factor tending to force the regular wholesale establishments out of the business. This situation culminated disastrously for two of the larger houses when the cooperatives established their own warehouses. The significant point is that it was cooperative buying which

first forced a readjustment in the wholesale-grocery trade.

The original cash-and-carry enterprise was established in 1925 as a subsidiary to one of the larger service enterprises. There are now three major firms operating in San Francisco on a non-service basis. Two of the cash-and-carry enterprises are subsidiaries of service establishments. The third firm is a large wholesale establishment, the stock of which is held by an eastern holding company which also controls extensive chain-store interests. This firm acts as wholesaler to a local chain system along with the operation of the cash-and-carry depots. The paradoxical situation of a wholesale-grocery establishment serving a companionate chain and yet competing for the business of the independents has aroused considerable feeling among the members of the trade. The San Francisco Retail Grocers' Association has been very actively opposing this particular house.

Adjustments Necessary to Survival

Just what are the adjustments that have been made by surviving firms to meet this new state of affairs? It has already been noticed that the majority of the old-time firms have left the business. What of the remaining firms? The methods of adaptation that are being employed by the larger surviving firms to meet the rigors of these new conditions have translated all of them into types which bear very little resemblance to their orthodox, general-line, service forbears. The processes of adaptation may best be examined in connection with: (1) the number and type of items carried in stock, (2) the efforts to obtain controlled lines, (3) the use of private labels, (4) efforts to build an export volume, and (5) efforts to sponsor groups of retailers as subsidiary, contractual organizations.

There is no tendency at present among the surviving firms to add items to stocks by diversifying or by branching out into other fields. On the contrary, there is a fundamental tendency towards a simplification of stocks. The specialty houses concentrate on a few specialty items. The cash-and-carry and cooperative enterprises are limited to bulk and staple items. The four surviving service houses are concentrating their selling efforts upon the higher-profit specialties and make no serious bid for the staple volume except through subsidiary relationships.

Wholesalers are handicapped by the nature of grocery products when they attempt to obtain exclusive agencies. Yet two of the San Francisco firms have succeeded in obtaining a considerable number of controlled lines. These lines, of course, consist of goods that do not "walk themselves off the shelves." One San Francisco firm in particular is attempting to build a line of controlled items. This firm feels that it is constantly becoming easier to obtain such items. Although this effort should be recognized as one of the current methods of adaptation it is relatively unimportant in the total situation. Controlled lines, alone, do not offer a way out.

Much more fruitful is the practice of pushing private brands. The four large houses, that alone survive from among former monarchs of the trade, are of some consequence primarily because of the success of their private-label merchandising. Their chief selling effort is directed behind their own products. Private brands are most important in canned goods, especially fruits and vegetables, but also in jams, preserves, jellies, dried fruits,

coffee and fish products.[4] Although the larger portion of the goods sold under the wholesalers' labels is picked up from independent packers, there is some tendency toward manufacturing. Coffee is roasted and packed by all of the houses. There is a tendency on the part of the wholesalers to pack jams, preserves, jellies, and fancy items.

The brands of the local wholesalers have a very excellent reputation in the trade and sell throughout a wide territory. Private labels have allowed these houses to cover the Pacific Coast and to reach into foreign markets, whereas the market for bulk items and nationally advertised staples is limited to a small local radius.

In addition to the four large local firms that have established themselves as manufacturing wholesalers, there are two eastern private-label houses in the market. One of these maintains a branch and has a considerable line of goods under its own labels. It has a policy of selling only to independent retailers. As yet it has not been able to push very deeply into the market. The other eastern firm has a comparable line but at present sells only on a brokerage basis in this market.

It is quite natural for the San Francisco wholesalers to think in terms of foreign trade. The larger houses have built a considerable volume of trade in the islands of the Pacific and in the Orient, and even in Australia. Most of this trade is in private-label products. Likewise, some amount of importing is carried on. Of course, this export and import business compensates these firms only in part for the half of a normal market which would be theirs but for the Pacific Ocean. The semi-circular nature of this coast market should be kept in mind when comparing San Francisco conditions with those of interior wholesale centers.

Finally, there are the attempts to sponsor voluntary contractual groups. It is interesting to note that none of the San Francisco wholesale establishments has taken a direct financial interest in retail stores. However, three firms have promoted affiliations with chains of independents. This sort of effort is too recent in the local market to indicate its possibilities. Two of these voluntary chains are being fostered by small houses apparently in a last-trench effort. However, one of the largest firms is also engaged in developing a retail affiliation and hence has made it a serious project.[5]

The largest of these groups may be taken as typical of the possibilities to date. This group comprises over 1,100 members in the Pacific Coast region. 239 stores are claimed in San Francisco. Member retailers sign a contract with a corporation which is a subsidiary to the parent firm. Under the terms of the agreement staples are sold at a competitive price to members. The retailers do not agree to buy the private brands of the wholesaler but it is assumed that they will be favorably inclined to them. In addition to group buying there is group merchandising effort. A committee of the member stores meets biweekly to select leaders from a list presented by the wholesaler.

[4] One of the prime reasons for the growth of the private-label business in these lines is the easy access to sources of supply. The packs of many small independent fruit and vegetable canners offer a wide selection. Also, San Francisco ranks third as an importing point for coffee in the United States. Coffee roasting is the largest single industry in the city on the basis of the value of the product. Thus, coffee, fruits, vegetables and fish products are readily available for exploitation.

[5] It seems impossible to know just how many stores are affiliated in these three groups, since the figures given by the firms are contradicted in a most decided

These leaders are advertised by the stores and by the parent firm. In addition, advertising and merchandising assistance is given to the members, such as bulletins and prepared advertising materials. "Supervisors" are employed to offer merchandising advice. At present, the organization is a loose one; but it is hoped that it may gradually become more formal and may develop a more definite program. This type of effort to date must bow to the cooperative wholesalers who are rooted much more deeply.

Conclusion

Thus, on January 1, 1930, the wholesale-grocery business in San Francisco was divided among the following types of enterprises:

I. Four large private-label houses, survivors of the old service establishments. One of these firms is organizing a voluntary chain, another operates a cash-and-carry subsidiary, and a third operates non-service depots outside San Francisco.

II. Three narrow-line houses with retail affiliations. One of these affiliations may be considered as a semi-cooperative buying group, the other two as voluntary chains. One of these firms also operates a non-service subsidiary.

III. Two eastern manufacturing wholesalers with branch offices in San Francisco. However, only one of these should be considered as doing a jobbing business at present.

IV. Thirty-one small specialty establishments dealing in Italian food specialties or serving institutional trade.

V. Three major cash-and-carry enterprises, two of which are operated as subsidiaries by local jobbers and the other in connection with a chain system.

VI. Three cooperative buying groups, one of which is semi-cooperative since it is sponsored by a jobber, and two of which are retail owned and operated. A fourth informal buying club has just disbanded.

No one may claim to predict the future of grocery wholesaling in San Francisco save for a few months. The large private-label houses, the cash-and-carry enterprises, the two major cooperatives, and the small specialty firms have demonstrated a trade rooting which guarantees their continued operation in the near future. Beyond the immediate future, the trade structure seems to be primarily dependent upon chain-store activity in relation to the checks of cooperative groups and voluntary chains. Chain-store systems have not as yet demonstrated that the alert individual grocer is doomed.

Perhaps the prophecy of one of the oldest wholesale grocers of San Francisco is a reasonable interpretation of the trend. This particular wholesaler feels that in the future the grocery business will be dominated by three types of groups; *viz.*, the chain-store systems, the cooperative-wholesale groups and the voluntary chains sponsored by jobbers. It does appear that the retail-grocery business in the future will offer slight opportunity to the small independent grocer who wishes to remain free from some form of alliance.

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fashion by other members of the trade. It is quite likely, too, that a given firm may not be entirely certain of its membership at a given time due to the loose nature of these organizations. Roughly, it appears that not over 500 stores in San Francisco are involved in these three organizations, with almost half of these in the larger grouping; many of the members are necessarily very small.

INSTALLMENT FINANCE AND THE EFFICIENT USE OF CAPITAL

By OTTO C. LORENZ

DURING the past fifteen years American business has striven mightily to become a science. Budgets and forecasts have been made in which approximations have been largely eliminated. Based on data at hand and past experience records, future performance has been estimated with reasonable hope of accuracy. The law of probability has been observed. Just as the engineer has striven to obtain the maximum efficiency from a motor, so American business has begun to apply the methods of engineering and science to the business machine in the hope of obtaining an equal degree of efficiency. The charts and graphs which have accompanied scientific tests have become curves in which volume of production, sales, costs, and an amazing variety of business data are recorded. Accuracy of thought, analysis of available data, and a search for the truth have become the aims of American business, and budgets and forecasts based on reliable data and calculated in such a manner as to eliminate approximation and guesswork as far as possible are now indispensable.

The Problem

If we turn to the field of installment finance we are confronted with certain mathematical obstructions which make a forecast difficult. A merchant knows that if he purchases $120,000 of merchandise, he will turn this stock over or sell it within a definite period which his past experience has told him is a reasonable expectation. If this period should happen to be one month and the sale of the merchandise is not subject to seasonal fluctuations, then this particular merchant should be able to transact a volume of $1,440,000 in a twelve-month period with an investment in stock of $120,000. But if it is required to determine how much installment business a finance company can do with an investment of $120,000 a very tedious problem presents itself. The turnover of this capital is dependent upon the type of installment contract purchased,—whether the contract is payable in equal monthly installments and whether it is spread over six, or nine, or twelve months, or over some other period. Assuming that the amount of $120,000 is invested in January in installment contracts which are repaid in 12 equal monthly installments, it is obvious that in February one-twelfth of $120,000, or $10,000, becomes due and payable. Assuming that this amount is actually paid and reinvested in February in $10,000 more of 12-month contracts, it is obvious that in March $10,000 of January's investment becomes due and one-twelfth of February's investment of $10,000 also matures, making possible a reinvestment in March of $10,833.33. A continuation of this process becomes more and more involved and subject to error.

The need for accurate formulæ applying to the above case of installment contracts, and involving not only twelve-month contracts but any desired length of installment contract over any desired period of time, is essential to many forecasts involving installment finance.

In the past this need has been overcome to a greater or less extent by a reliance upon experience records, and future requirements have been budgeted to some extent from such records. Obviously, such a procedure is often only approximate and, if relied upon exclusively, may become hazardous in the event that a radical change occurs in any one factor affecting the income of the installment finance company. A sharp increase in overhead expenses or rediscount charges, a radical change in the length of the installment contracts purchased by the finance company, or a severe cut in finance charges below the point for which previous experience might be found, would perhaps make havoc of the company's earnings statement. Past experience records might then prove to be insufficiently accurate for safety and the need for exact calculation of the effect of such changes would become pressing.

For purposes of illustration, suppose that a certain American finance company, with a wealth of installment experience in the United States, plans to extend its installment finance service into certain territories of South and Central America. A survey of the territory demonstrates that the cost of supervision and management is very much higher per dollar of installment contracts purchasable than for any territory in the United States which it has yet covered. Competitors have already established finance charges in the territory in question which differ from those in effect in the United States. The following questions immediately arise in the mind of the executive:

1. Are the finance charges high enough to overcome the greater cost of operation?
2. How much volume is required to cover the cost of operation?
3. How much capital will be employed in the operation?
4. How much business can be purchased and rediscounted profitably?
5. On the basis of commitments in hand, what is the maximum amount of operating cost permissible, making provision for a normal return on the amount of capital invested?
6. How does this maximum cost permissible compare with the minimum operating cost requirements for the territory?

A satisfactory solution to these questions cannot be obtained without some degree of pure mathematical study. However, three of the simpler solutions will here be given in order not only to demonstrate the feasibility of work of this character, but also to emphasize its absolute necessity. The final solution given in this article makes use of a formula which is of basic importance in installment finance budget work. The derivation of the formula involves mathematical work of an advanced character and the formula itself is rather formidable, so that for practical purposes a table has been constructed (Table III) the use of which will be described in due course.

Before undertaking the solution of any of the questions raised, a short analysis will be made of the way in which Table I and Table II are constructed.

If a volume of 1 (unity) be transacted per month over a period of 12 months, then obviously the total volume for the period is 12. Assuming that each of these unit volumes per month is made up of installment contracts payable in 12 equal monthly installments, then the behavior of these transactions is as follows:

In the first month, or January, a volume of 1 is transacted which is repaid at the rate of $\frac{1}{12}$th of 1 per month over the 12 successive months.

In the second month, or February, another volume 1 is transacted which is also repaid at the rate of $\frac{1}{12}$th of 1 per month over the 12 successive months.

Tables of these transactions follow; an examination of Table I will show how Table II has been derived.

TABLE I

V = volume transacted each month.
R = repayments or installments due from each series of transactions.

	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R
Jan.	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	11 1/12
Feb.	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	10 1/12
Mar.	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	9 1/12
Apr.	..	..	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	8 1/12
May	..	..	..	..	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	7 1/12
June	..	..	..	..	..	..	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	6 1/12
July	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	..	1/12	1	5 1/12
Aug.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	..	1/12	1	4 1/12
Sept.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1/12	..	1/12	..	1/12	1	3 1/12
Oct.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1/12	..	1/12	1	2 1/12
Nov.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1/12	1	1/12
Dec.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	
Total	1	..	1	1/12	1	2/12	1	3/12	1	4/12	1	5/12	1	6/12	1	7/12	1	8/12	1	9/12	1	10/12	1	11/12	12	66 1/12

TABLE II

For 12-month installment contracts only. To determine the amount of investment required for any particular month and the total investment required for the period, where the volume is a constant (unit) amount each month throughout the period.*

Month	Installments Due	Investment Required for Month in Question (Installment Sales for Current Month Less Installment Payments Due for Current Month)	Total Investment Required for the Period (Total Installment Sales Less Total Installments Due for the Period)
1 (Jan.)	.....	12 1/12 (1)	12 1/12 (1)
2 (Feb.)	1/12	11 1/12	23 1/12
3 (Mar.)	2/12	10 1/12	33 1/12
4 (Apr.)	3/12	9 1/12	42 1/12
5 (May)	4/12	8 1/12	50 1/12
6 (June)	5/12	7 1/12	57 1/12
7 (July)	6/12	6 1/12	63 1/12
8 (Aug.)	7/12	5 1/12	68 1/12
9 (Sept.)	8/12	4 1/12	72 1/12
10 (Oct.)	9/12	3 1/12	75 1/12
11 (Nov.)	10/12	2 1/12	77 1/12
12 (Dec.)	11/12	1/12	78 1/12

*It should be observed that the first month of operations requires the heaviest monthly investment, and that thereafter the installments which become due lighten the monthly investment burden to the point where, after the 12th month, no new capital need be invested, inasmuch as the installments due are equal to the volume of transactions per month, provided that the volume still remains a constant (unit) amount each month. It should be observed further that the total investment required to carry this volume of unity per month is 78 1/12ths and that this amount becomes permanently invested. Finally, it may be observed that the installments repaid during the period of 12 months are 66 1/12ths. This point is made use of in the calculation of earned income.

The actual problem may now be considered:

First Solution

(In which the volume will be financed entirely by capital and no rediscounts will be made.)

Assume that

$120,000 = the commitments (volume) estimated to be obtainable per month.
$1,440,000 = total volume for the 12-month period.
10% = finance charges obtainable in the territory under consideration (expressed as a flat rate).
9% = return per annum required on the investment.
$20,000 = operating expenses estimated to be required for the territory.

From Table II it will be found immediately that:

$120,000 × 78 1/12 = $780,000, total investment required during 12-month period.

and

$120,000 × 66 1/12 = $660,000, installments due during 12-month period,

Assuming that the installments due over the twelve-month period have all been paid at maturity, the earned income can be obtained at once by multiplying the amount of installments due as obtained above by the finance charge:

$660,000 × 0.10 = $66,000 earned income.

Deduct		
Operating Expenses	$20,000	
Reserve for bad debts†	7,200	27,200
		$38,800 amount available for dividends.

† The reserve for bad debts is established on the basis of ½ of 1% of the volume.

As the capital investments were made in varying amounts over various periods, it is only fair that the dividend be calculated on the basis of time and amount of capital invested. Turning to Table II it will be seen that, of the initial investment of $120,000:

$12\frac{1}{12}$ are invested for 1 month (the first)
$23\frac{1}{12}$ are invested for 1 month (the second)
$33\frac{1}{12}$ are invested for 1 month (the third)
etc.,

making a total of

$650\frac{1}{12}$ which are invested over a period of 12 months.

Now, since the dividend rate required is 9% per annum, or $\frac{3}{4}$ of 1% per month, the actual dividend required will be:

$$\frac{650}{12} \times \$120,000 \times \frac{0.09}{12} = \$48,750, \text{ dividend required.}$$

From this it may be seen that

Income available for dividends	= $38,800
Dividend required	= 48,750
Would leave a deficit of	= $ 9,950

In other words, if the business were carried on under the conditions stipulated and according to the program outlined in this first solution, a loss or deficit of $9,950 would be incurred. In answer to the questions on page 452, we find the following:

1. The finance charges were not high enough to overcome the cost of operating expense, establish a reserve for bad debts, and afford a return of 9% per annum on the amount of capital invested.

2. In order to determine what volume of business must be transacted in order to satisfy the above conditions, an equation may be formed in which the total earned income forms one side of the equation and all expenses, reserves, and dividend requirements form the other side.

Let A = the volume of business required per month. Then

$$\underbrace{\frac{66}{12} \times 0.10 \times A}_{\text{Earned income}} = \underbrace{\$20,000}_{\text{Operating expenses}} + \underbrace{0.005 \times 12 \times A}_{\text{Reserve}} + \underbrace{\frac{0.09}{12} \times \frac{650}{12} \times A}_{\text{Dividends}}$$

which reduces to

$0.084 A = $ 20,000

$A = $238,214, the amount of business required each month to pay operating expenses of $20,000, establish a reserve for bad debts and pay dividends at the rates specified above; in other words almost two times greater than the amount estimated as obtainable.

3. Operating at a deficit of $9,950, a capital investment of $780,000 would have been required to transact the volume of business specified.

4. Under the procedure of this particular solution, no transactions would have been rediscounted.

5. The maximum amount of operating expense permissible would have been $10,050, after having made provision for a 9% return on invested capital and after having established a reserve for bad debts of ½ of 1% of the volume.

6. As the maximum cost permissible is much less than the minimum operating cost requirements for the territory under this method of procedure, adjustments in the direction of smaller dividends or reserve for bad debts, greater volume, or larger finance charges must be considered if the method of capital investment described in this first solution is to be followed.

We are now ready for the

Second Solution

(In which one-fifth of the monthly volume is financed by capital investment and the remaining four-fifths are financed by rediscounting the contracts purchased at a rediscount cost of 6% per annum.)

The remaining terms of the problem are as before, namely:

$120,000 = the volume estimated as obtainable per month.
10% = finance charges obtainable (flat rate).
9% = dividend rate required.
$20,000 = operating expenses required.
½ of 1% = reserve for bad debts (based on volume).

The solution of this problem may be conveniently divided into two parts: a consideration of the behavior of the capital investment, and a consideration of the behavior of the amounts rediscounted.

The capital investment is to be one-fifth of the monthly volume of $120,000, or $24,000 in the first month. $24,000 of the volume of each successive month will be financed in part by additional capital investment and the balance by the installments due on the capital already invested. It follows that:

$\$24,000 \times 78\frac{1}{12} = \$156,000$ total capital investment required,

and

$\$24,000 \times 66\frac{1}{12} = \$132,000$ total installments due.

The earned income on the capital investment would then be

$\$132,000 \times 0.10 = \$13,200$ earned income

From this must be deducted the amount for dividends (based as in the first solution on the amount of time the capital is invested):

$\frac{650}{12} \times \frac{0.09}{12} \times \$24,000 = \$9,750$ dividend requirement.

(a) leaving $3,450 as the amount of earned income from capital investment available for operating expenses and reserve.

The behavior of the rediscounted amounts must next be taken into consideration. It is evident that the rediscounted amounts are $96,000 per month and that the total amount rediscounted will obey the same law as the total amount of capital determined in Table II. Hence:

$96,000 × $^{78}/_{12}$ = $624,000 rediscounted amount outstanding at end of twelfth month.

The earned income may be determined as before from the amount of installments due over the 12-month period as follows:

$^{66}/_{12} \times 0.10 \times \$96,000 = \$52,800$ earned income from rediscounts.

The cost of the rediscounted material may be determined in the same manner in which the dividends were calculated in the first solution. As the installments due reduce the amount of rediscounted transactions each month it is obvious that the total amounts of rediscounts outstanding will be as follows:

$^{12}/_{12}$ths in the first month for a period of 1 month.
$^{23}/_{12}$ths in the second month for a period of 1 month.
$^{33}/_{12}$ths in the third month for a period of 1 month,
etc.,

making a total of $^{650}/_{12}$ths which are rediscounted for periods of one month over a total twelve-month period. Hence:

$\frac{650}{12} \times \frac{0.06}{12} \times \$96,000 = \$26,000$ cost of rediscounts on the basis of interest charges at 6% per annum.

Deducting this amount from the amount of earned income from rediscounts, it follows that:

(b) $26,800 = amount of income available from rediscounts for operating expenses and reserves.

Adding (a) and (b), we obtain:

	$30,250	Total amount of income available for operating expenses and reserve.
Less	27,200	Amount required for operating expenses and reserves.
	$3,050	Surplus, as compared with a deficit of $9,950 obtained in the first solution.

Again answering the questions raised on page 452, we observe:—

1. The finance charge rates are sufficient to meet the costs of operations.

2. The amount of volume needed to cover operating costs, reserves and dividends may be determined rapidly from the following equation:

Let 5 A = monthly volume required.

Then:

$$\left(\frac{66}{12} \times 0.10 - \frac{650}{12} \times \frac{0.09}{12}\right) \times A + \left(\frac{66}{12} \times 0.10 - \frac{650}{12} \times \frac{0.06}{12}\right) \times 4A = \$20,000 + 0.005 \times 12 \times 5A$$

from which A = $20,825

and 5A = $104,125 or the monthly volume required in order to cover all expenses, set up reserves, and provide for dividends,—almost $16,000 less than the volume estimated to be obtainable.

3. The amount of capital investment required under this procedure was only $156,000 as compared with $780,000 in the first solution.

4. Four-fifths of this business would have been rediscounted with ultimate profit.

5. The maximum amount of operating expenses permissible could have run as high as $23,050.

6. As the maximum operating cost permissible is higher than the actual amount estimated to be necessary, this particular solution offers a safety factor with respect to operating in the territory under consideration. In other words operating expenses could run $3,050 higher than the amount estimated to be necessary, or volume of business could fall off to $104,125 per month, without endangering dividends or reserves.

Obviously the capital has been employed with much greater efficiency in this solution. It would seem to be equally obvious that the efficiency increases as the amount rediscounted is increased and as the amount of capital employed is decreased. However, good practice has wisely established a limit to the amount of transactions which may be rediscounted, this limit being set at four or five times the amount of capital or net worth represented by the finance company.

A flagrant violation of this rule occurred in Europe in 1929. An old established insurance company created a subsidiary for the purpose of financing installment sales. The subsidiary company's outstanding notes payable in July, 1929, were over 100 times as

great as the paid-in capital and surplus. These notes payable were due to banks on a 90-day basis; and in spite of the fact that very few notes were expressly renewable, the money loaned by the banks to the subsidiary had been invested in installment paper maturing in anywhere from 12 months to 24 months, thus violating another old-established banking rule. The amounts borrowed from the banks were, of course, guaranteed and endorsed by the parent company. Severe losses were detected in the subsidiary's operations, banks called their loans, and it was found that the position of the parent company had been seriously impaired. The common stock of the parent company dropped from 1,000 bid in July to 50 asked and no bids in August. This unfortunate example was pointed to by European bankers as the inevitable result of installment financing in whatever form and however conducted—a very unfair position to take, in the writer's opinion, inasmuch as this company's method of operation had been grossly indifferent to the principles which have come to be recognized as good installment practice.

The writer has emphasized this point in order that the course indicated by the second solution may not be carried to an extreme. In other words, although the second solution would indicate that the use of borrowed funds provides a greater profit for the capital invested, this policy must not be pursued to the extreme described above, but should be restricted carefully within the limits recognized as being good installment finance practice.

Two solutions have now been developed employing the use of very simple mathematics. Consideration must now be given to the method of investment described at the beginning of this article, where an initial investment of $120,000 in twelve-month installment contracts was made and where the installments due were reinvested in additional twelve-month contracts. Table III is given below showing the proper factors for installments due, and for capital turnover (volume) with respect to twelve-month installment contracts only, where an initial investment of 1 has been made, and where the installments due have been reinvested in additional twelve-month installment contracts.

Table III

For twelve-month installment contracts only. For the determination of the amount of installments due during any month from an initial investment of one unit, such installments due having been reinvested in additional twelve-month contracts; and also for the determination of total volume transacted during any required period, the behavior of the transactions being identical with the foregoing.*

Month	Installments Due	Total Volume for Period (Capital Turnover Factor)
1 (Jan.)	.....	1.0000
2 (Feb.)	0.0833	1.0833
3 (Mar.)	0.0903	1.1736
4 (Apr.)	0.0978	1.2714
5 (May)	0.1059	1.3774
6 (June)	0.1148	1.4921
7 (July)	0.1243	1.6165
8 (Aug.)	0.1347	1.7512
9 (Sept.)	0.1459	1.8971
10 (Oct.)	0.1581	2.0552
11 (Nov.)	0.1713	2.2265
12 (Dec.)	0.1855	2.4120

* The exact formula upon which the above table is based is as follows:

If S = Total volume for the period required

p = Number of months in the period under consideration less one

n = Number of installments in the installment contracts under consideration

Then:

$$S_p = \left(1 + \frac{1}{n}\right)^p - \frac{p-n}{1}\left(1 + \frac{1}{n}\right)^{p-n-1}\frac{1}{n} + \frac{(p-2n)(p-2n-1)}{\lfloor 2}\left(1 + \frac{1}{n}\right)^{p-2n-2}\frac{1}{n^2} - \cdots$$

The progression of this formula may be seen from the above. In substituting actual values, the formula is continued until the last term becomes a zero factor. The remaining terms are then evaluated, the result being the capital turnover factor for the particular installment contract and period under consideration.

The mathematical work involved in the derivation of the formula underlying this table is of basic importance in determining the most efficient methods of procedure under varying terms of installment finance conditions. An indication of only one of its uses is permitted within the scope of this article.

Third Solution

In the second solution a total capital investment of $156,000 was required. This $156,000 was absorbed over a period of twelve months. If the same amount of capital is put into play as rapidly as possible, $120,000 of the $156,000 will be made use of in the first month and the remaining $36,000 plus the installments due from the first month's investment will finance a part of the second month's volume. In order to determine just how far the capital investment will go on this basis, what earned income will be realized, and how much volume must be rediscounted, use will be made of Table III.

Month	Capital Investment	From	Installments Due	Total
Jan.	$120,000			
Feb.	36,000	Jan.	$120,000 × 0.0833 = 10,000	$10,000
Mar.		Jan.	120,000 × 0.0903 = 10,840	
		Feb.	36,000 × 0.0833 = 3,000	13,840
Apr.		Jan.	120,000 × 0.0978 = 11,740	
		Feb.	36,000 × 0.0903 = 3,250	14,990
May		Jan.	120,000 × 0.1059 = 12,720	
		Feb.	36,000 × 0.0978 = 3,520	16,240

Continuing this process throughout the 12-month period we obtain:

$212,710 = total amount of installments due.

Had it not been necessary to determine the amount of rediscounts required month by month, the installments due could have been found much more rapidly and easily by using the capital turnover factor for the period in question after subtracting *one* therefrom, and multiplying by the initial investment:

$$\$120{,}000 \times (2.4120 - 1.0000) = \$169{,}440$$
$$36{,}000 \times (2.2265 - 1.0000) = \quad 44{,}154$$
$$\text{Total installments due} \qquad = \$213{,}594^*$$

* There is a small discrepancy (less than $\frac{1}{10}$ths of 1%) between this figure and $212,710, due to the fact that Table III has been carried to only four places and that the individual amounts of installments due as calculated above have been given in round figures.

The earned income on the capital invested will then be

(c) $213,594 × 0.10 = $21,359

Now with respect to the rediscounted material. It is necessary to determine first of all how much volume must be rediscounted month by month, as follows:

Month	Capital Investment	Installments Due	Rediscounts Required	Total Monthly Volume
Jan.	$120,000	.....	.....	$120,000
Feb.	36,000	$10,000	$ 74,000	120,000
Mar.	.....	13,840	106,160	120,000
Apr.	.....	14,990	105,010	120,000
May	.....	16,240	103,760	120,000

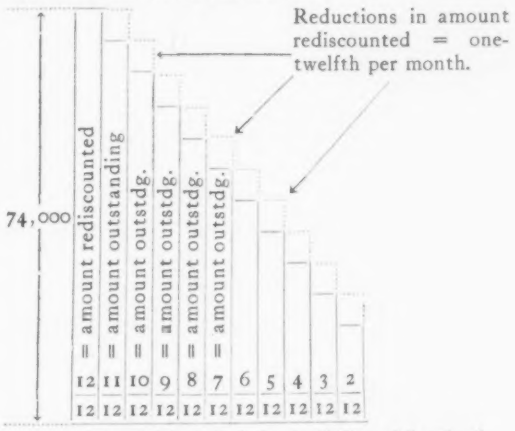
Continuing in this manner, the total amount of rediscounts required during each month is obtained. It now becomes necessary to determine the amount of installments due or paid during the twelve-month period from this rediscounted volume of business. It is evident that $\frac{12}{12}$ths of the rediscounted volume of February will mature within the 12 month period; $\frac{9}{12}$ths of the third month's rediscounts; $\frac{8}{12}$ths of the fourth month's, and so on. Tabulating we obtain:

$$\$\ 74{,}000 \times \tfrac{12}{12} = \$61{,}700$$
$$106{,}160 \times \tfrac{9}{12} = \ 79{,}600$$
$$105{,}010 \times \tfrac{8}{12} = \ 70{,}000$$
$$103{,}760 \times \tfrac{7}{12} = \ 60{,}500$$

and so on, making total installments due from rediscounts, $447,080. Applying the finance charge against this amount, the earned income from rediscounts is obtained at once:

$447,080 × 0.10 = $44,708 earned income from rediscounts.

From this amount must be deducted the cost of rediscounts. An inspection of the accompanying chart will help to derive the factors necessary to determine the cost of rediscounts:


Reductions in amount rediscounted = one-twelfth per month.
74,000
= amount rediscounted
= amount outstanding
= amount outstdg.
= amount outstdg.
= amount outstdg.
= amount outstdg.
12 11 10 9 8 7 6 5 4 3 2
12 12 12 12 12 12 12 12 12 12 12
F M A M J J A S O N D = Month of
2 3 4 5 6 7 8 9 10 11 12 Period.

From this chart it is evident that if the cost of rediscounts is 6% per annum or ½ of 1% per month, then the costs of the rediscounts outstanding in February will be:

$$\tfrac{12}{12} \times \$74{,}000 \times 0.005$$

in March $\tfrac{11}{12} \times 74{,}000 \times 0.005$

April $\tfrac{10}{12} \times 74{,}000 \times 0.005$

May $\tfrac{9}{12} \times 74{,}000 \times 0.005$ and so on.

Summing these amounts for the required period, it is evident that:

$73\frac{1}{12} \times \$74{,}000 \times 0.005 = \$2{,}372$ cost of 2nd month's rediscounts.

Similarly

$75\frac{1}{12} \times \$106{,}160 \times 0.005 = \$3{,}320$ cost of 3rd month's rediscounts.

$73\frac{1}{12} \times 105{,}010 \times 0.005 = 3{,}150$ cost of 4th month.

$65\frac{1}{12} \times 103{,}760 \times 0.005 = 2{,}940$ cost of 5th month

and so on down through each month's rediscounted volume, from which the total cost of rediscounts is obtained by summing:

$23,333 = total cost of rediscounted volume.

Subtracting this amount from $44,708 (earned income from rediscounted material) we obtain

(d) $21,375 = net income from rediscounted volume.

Adding (c), the amount of earned income from capital invested, and (d) the net income from rediscounts, we obtain

$21,359 = (c)
21,375 = (d)

$42,734 = total net income derived from capital and rediscounts.

Now the cost of dividends and reserves is as follows:

Dividend on $120,000 for 12 months @ 9% = $10,800
Dividend on $36,000 for 11 months @ 9% = 2,970
Reserve of ½ of 1% on volume = 7,200

Total = $20,970

Adding the amount of operating expenses estimated ($20,000) to this total and subtracting from the total net income derived from capital investments and rediscounts, we obtain

$1,764 = net surplus derived from third solution.

Once more answering the questions raised on page 452, we find:

1. The finance charge rates are sufficient to meet the costs of operation.

2. The minimum amount of volume needed to cover operating costs, reserves and dividends may be determined most easily by reducing one of the rediscounted amounts.*

3. The amount of capital investment required under this procedure was $156,000 as in the second solution.

4. The amount of rediscounts outstanding at the end of the 12th month would be $523,023, or less than three and one-half times the capital invested of $156,000.

5. The maximum amount of operating expenses permissible could have run as high as $21,754.

6. As in the second solution we find that the surplus of $1,764 presents a safety factor which may overcome errors in the estimate of operating costs required in the territory, or errors in the estimate of volume obtainable. It is important to note that in each of these solutions the limits to which these errors of estimate may be carried are exactly defined.

Comparison of Results

The results of these three methods of procedure will now be tabulated in order that a comparison may be made of the efficiency of the various procedures. It should be emphasized that the conditions which each of these solutions was asked to satisfy were identical, namely:—

Commitments (volume) per month = $120,000
Finance Charges = 10% (flat rate)
Dividend rate required = 9%
Reserve required = ½ of 1% on volume
Operating expenses, estimated = $20,000

	1st Solution	2nd Solution	3rd Solution
Deficit	$9,950	.....	.....
Surplus	.....	$3,050	$1,764
Capital required	780,000	156,000	156,000
Dividends	48,750	9,750	13,770
Minimum volume required for twelve-month period	2,858,568	1,249,500	1,405,883
or Maximum operating expense permitted	10,050	23,050	21,754

At first glance the second solution would seem to have been the most profitable and efficient. It should be borne in mind, however, that in the third solution the capital investment has been put to work immediately and has also been used profitably. A choice of methods dependent upon the availability of capital is therefore pre-

* Note that the gross income from the amount rediscounted in February is

$6,180
less 2,372 cost of February's rediscount.

leaves $3,808 net income from February's rediscounts.

If the surplus of $1,764 obtained in the third solution is deducted from the net income from February's rediscounts, we obtain:

$2,044

This amount should equal the net income derived from February's rediscounts if operating costs, *etc.* are to be covered without surplus or loss. The amount of volume transacted in February is then determined as follows:

Let B = amount rediscounted in February.

Then

$(19\frac{1}{12} \times 0.10 - 73\frac{1}{12} \times 0.005) \times B = \$\ 2{,}044$

From which B = 39,883

making the total volume transacted in February equal to $85,883, instead of $120,000, and the volume for the year becomes $1,405,883.

sented. If an amount of $156,000 of capital were available in the first month of operations and no other use for it were presented, then the third method of procedure would prove attractive. If this amount were not immediately available, recourse might be had to the second solution.

Evidently a careful consideration of the manner in which capital shall be employed in installment financing is eminently desirable. An efficient use of capital may turn a deficit into a surplus. Variable finance charges, cost of rediscounts and volume of business must be studied; the effect on the finance company's earnings statement may be determined with exactitude, new markets can be opened with confidence, and competitive policies can be faced with definite knowledge as to the outcome. Many of the intricacies of the problem have been left untouched; the effect of profit or loss on volume and on capital, the effect of delinquencies and the effect of other methods of putting the capital to work remain to be analyzed and presented in practical form. The two tables discussed in this article facilitate some of this work and are an indication of what can yet be done.

Installment sales in the United States in 1929 are estimated to have been well over two billion dollars. Stripped of the broader markets now made available by installment finance, the output of many industries would be seriously curtailed. Unemployment would undoubtedly increase. In fact, the importance of installment finance in the industrial and banking field of today is no longer subject to argument. Efficiency in the installment finance field is sought as carefully as it is in other fields. Much has been written on the merits and demerits of installment sales, but little or nothing has appeared to show how various problems confronting installment finance have been solved. Valuable statistical work has been done, however, and standards of practice are being established. There remains the task of applying this knowledge efficiently, thus enabling installment finance to improve its own position and to render a maximum service to industry.

THE PROBLEM OF THE FURNITURE RETAILER

By A. F. WILLIAMS

LIKE many other types of retail distribution in the United States, the furniture trade, as a whole, has been backward in the application of modern methods of scientific management. This backwardness has created conditions in the trade which give rise to the need for a thorough analysis of its methods of marketing and a general reorganization of the merchandising practices.

In general, the difficulties at present evident in the retail furniture trade fall into four main classifications: (1) the wide-spread prevalence of price competition, (2) the changing character of consumer demand resulting from the growth of apartment-house dwelling, (3) the lack of confidence on the part of the consumer in the furniture dealers, and (4) the apparent lack of interest in furniture on the part of the consumer.

Wide-spread Price Competition

There seems to be little doubt that the promotional emphasis in the retail furniture trade during the past few years has been based to a large extent upon attractive prices and long-term credit. Trade papers and influential executives in the industry almost unanimously agree that these selling points have been stressed in the majority of cases to a greater extent than have other appeals.

The Furniture Record, a prominent trade paper in the industry, characterizes the furniture trade as "clouded by bargain sales, unnecessarily long credit terms, and cut-throat competition."[1] *The Furniture Journal*, another trade paper, states, "The present retail furnishings advertising is largely designed to sell the people who already feel the need for home furnishings. It is price, price, price, all the time, and price does not create potentiality."[2] Z. G. Simmons, president of Simmons Company, is quoted as saying, "There is utter confusion in the industry today because of the wide-spread effort to sell price only . . . "[3]

This placing of the chief promotional emphasis upon price and long-term credit is partly the result of ignorance of costs on the part of the dealer and partly the result of overproduction in the industry. During the period 1918–20, the furniture industry enjoyed a period of wide expansion. The building boom, accompanied by rising wage levels, made the sale of home furnishings a comparatively easy task. General optimism led to the construction of new plants and the increase in the capacity of many old factories.

Following the period of 1921–22, during which there was considerable idle plant capacity in the industry, recovery of buying power in the country led to a good market in 1923 and to increased production. Overproduction again set in, however, and curtailment followed. It was not until 1926 that full use was again being made of the plant capacity.

Since 1926, furniture factories have been operating at between 65% and

[1] July, 1929.
[2] February, 1929.
[3] *Furniture Record*, October, 1929.

75% of capacity, and various methods have been used to increase output. A reduction in the quality of furniture, price cutting and some reduction in the cost of raw materials have brought about declining price levels since 1923.[4] A second method has been the increase in the exploitation of installment selling. Installment selling has been the chief method of sale in the furniture trade for a number of years. It is estimated that approximately 90% of the furniture business is now done in this way,[5] but it is not the use, but the abuse, of installment selling which has contributed to the present conditions in the trade. The "dollar down" sale is a particularly good example of a practice of this nature. In addition, the spread of installment selling to many other different lines has affected collections in the furniture industry.

Price Cutting

The effect of declining price levels upon the trade has been to encourage price cutting and the use of liberal credit terms, which is another way of cutting prices. The result has been to lead dealers to use this method of merchandising more often and to soft-pedal emphasis upon quality.

The placing of the chief promotional emphasis upon price and long-term credit appears to be a questionable merchandising policy for two reasons. First, it has the tendency of "trading down" the industry and thus fails to capture the consumer's interest; second, it encourages price cutting and leads to so-called "cut-throat" competition.

Price, as a selling appeal, does not carry with it a meaning of quality, and it consequently fixes in the mind of the consumer the idea that economy is the chief element to be considered in the purchase of furniture. The logical result of this condition is that the customer has come to consider the purchase of furniture more in the light of a necessary expense than as the selection of an article which will add both comfort and beauty to life. Thus, the centering of promotional emphasis upon price effects no change in the primary demand for furniture but merely taps a demand which already exists.

Furthermore, when price occupies the central position in a store's advertising, news value is brought in only by price cutting. Bargains offer the chief means of appealing to the selective motives between stores. This inevitably leads to cut-throat competition, with merchants vying with each other to see who can offer the most attractive bargains. The effect of price-cutting upon total sales of furniture has not, however, been to bring about an increase in sales. The volume of furniture sales is not readily expansible, particularly by the use of the price appeal. Bargain offers merely shift the patronage from one store to another.

Price cutting has, in addition, led to the tendency on the part of the consumer to wait for bargains. Furniture is seldom purchased without considerable forethought, and it is, therefore, an easy matter to wait for attractive offers before buying. The best example of this tendency has been the growth in importance of the February and August sales as a part of the merchandising policy in the retail furniture trade.

The semi-annual sale was conceived primarily to even out the retail sales curve during the year. Since these

[4] *Dun's Review*, March, 1928.

[5] Federal Trade Commission: *Report on House Furnishing Industry*, Vol. I (1925).

sales offered the manufacturer an opportunity to reduce his costs through the use of his plant during dull seasons, dealers were able to obtain merchandise at considerably less than at other times during the year. As these semi-annual sales became more prevalent in the trade, manufacturers came to expect them and, as a result, refused to make price concessions during these periods. Dealers, therefore, were faced with the alternative of reducing their margins or cutting down on the quality of the merchandise sold. The semi-annual sale has brought about a smoother seasonal curve in the furniture trade, but the increasing tendency on the part of the consumer to buy during the bargain period may be serving to glut the dealers' markets with low-margin or cheap merchandise where better merchandise might be placed at less selling and advertising expense.

The practice of stressing price and credit terms as the chief means of promotional emphasis in the trade does, therefore, have certain weaknesses as a merchandising policy. There is no reason to believe, however, that it should be discarded entirely. Furniture brings a comparatively high unit price, and, therefore, the price element will doubtless always play an important part in the purchase of such merchandise. Very often, also, a customer brought into a store by bargain advertising is sold a better piece of merchandise.

It is not so much the use of price-and-terms selling as the lack of stress upon other motives which is reflected in the consumer demand for furniture. A greater proportion of retail furniture advertising devoted to appeals to the motives of pride, artistic taste, and the desire for comfort will undoubtedly accomplish valuable results by attracting a greater consumer interest in the furnishing of the home. The consumer's interest in home decoration has heretofore been neglected by the retail dealer in his advertising, and, as will be pointed out later, the education of the consumer as to the principles of interior decorating and as to the significance of furniture styles would prove to be an effective merchandising and advertising opportunity to the retailer.

Changing Character of Consumer Demand

The second difficulty being felt in the retail furniture trade is the changing character of consumer demand resulting from the growth of apartment-house dwelling. In 1921, 58.3% of the population in 257 representative cities lived in one-family dwellings, 17.3% in two-family dwellings, and 24.4% in multi-family dwellings, chiefly apartments. In 1928 these figures were 35.2%, 11.1%, and 53.7%, respectively.[6] Thus, the apartment-house dwelling population has more than doubled during the past eight years in those localities.

Many reasons are given for this movement. The concentration of population in the small areas of large cities and the decrease of labor in the home are two of them. It is unnecessary to discuss the causes here, and sufficient to note the significance of the movement in connection with the furniture industry.

The trend toward apartment-house life or more compact dwellings and away from the commodious private home has curtailed the living quarters of a large number of families. Dining rooms have been eliminated, kitchens

[6] *Furniture Record*, September, 1929.

have become kitchenettes, and one room must often serve for living and sleeping. These changes in living habits have come about rapidly and are clearly reflected in the purchase of furniture.[7] Furthermore, many of these apartments are rented furnished, and individuals do not, therefore, take the interest in furniture that might otherwise be expected. The profit margins on contract orders of this type are low, because of the keen bargaining ability of the buyers for apartment-house builders.

The tendency toward the concentration of population in apartment houses throughout the country may not, however, necessarily mean a reduction in furniture sales in the future. In the first place, there is a considerable opportunity for the sale of better furniture rather than more furniture. With smaller homes the consumer is more likely to wish high utility and quality in what space there is available. In the second place, the introduction of a more rapid style movement is highly probable under these changed conditions. With living concentrated in a few rooms and the home more or less temporary, furniture is more likely to become monotonous and to be changed frequently, particularly when families move often. Finally, a greater interest in the home may be expected with a smaller unit, and the increasing importance of the convenient kitchen, the radio, and the traffic problem are additional reasons to expect a somewhat greater interest in the home in the future. The shrewd retailer will be the one who adapts his stock to this changing demand of his market and, thereby, takes advantage of its opportunities.

[7] "What's the Outlook for 1929?" by the Arthur Fertig Company, *Furniture Journal*, February, 1929.

Consumer Lack of Confidence in Dealers

The third difficulty facing the retail furniture trade is the lack of confidence on the part of customers in furniture dealers. In a consumer study of 48,600 housewives in representative sections of the country, conducted in connection with the National Homefurnishing advertising campaign, the Millis Advertising Company[8] found that 48.4% stated they would shop oftener in furniture stores if it were not for the high-pressure methods used. Allowing both for inaccuracies which may have crept into the study as a result of the methods used and for the fact that many women would not shop oftener in furniture stores for other reasons, this appears to give some indication of the lack of confidence in furniture dealers.

This lack of confidence is partly the result of the more or less "out-of-date" trade practices in the industry and partly the result of the attempt of the dealers to direct an appeal to too wide a range of market strata in the case of the individual store.

Many stores still lack a one-price policy, and customers are forced to haggle for their purchases much as their grandfathers did. Actual misrepresentation is common in the trade. Not only is the average customer unable to judge the quality of furniture, but the salesman with whom she deals often knows but little more than she concerning the merchandise. The practice of passing a customer from salesman to salesman in a store in an attempt to force a sale has hurt the reputation of the trade and kept many customers away. Moreover, the frequent use of price-cutting has led the customer to distrust the regular prices in the store.

[8] *Why People Don't Buy Furniture*, Millis Advertising Company, 1928.

Of these trade practices, the policy of misrepresenting merchandise has perhaps done most to undermine consumer confidence in the trade. The belief that furniture salesmen are dishonest has kept many prospective buyers from furniture stores. The traditional use of the straight-commission basis of payment of furniture salesmen may be an important reason for this condition, since it places the entire emphasis on sales volume. The use of a salary-plus-commission basis would give the retailer more control over his salesmen's activities and would lead to the placing of more emphasis upon the satisfaction of the customer. The education of salesmen as to the qualities and styles in furniture would also serve to help accomplish this purpose.

The policy of haggling with a prospective buyer as to the price of a piece of merchandise is a comparatively out-of-date practice in most trades and is not looked upon with favor by the customer. While the visits of an individual customer to a furniture store are many times less than to a department store, the importance of customer goodwill must, nevertheless, be recognized.

The second cause of the lack of consumer confidence in furniture dealers has been the fact that the majority of furniture stores have been unable to identify themselves clearly in the minds of consumers, because they have attempted to strike at too many market strata. Stores in stressing the price appeal have caused hesitancy on the part of their well-to-do customers who fear cheapness in quality. On the other hand, the policy of these same stores of placing high-priced merchandise in their windows and on their street floors has driven out many potential customers of more moderate means who are attracted by the store's bargain advertising. The selection of definite market strata to which to make an appeal would lead to the elimination of much of the confusion that exists at the present time in the minds of the consumers and would better enable a store to maintain a continuity of policy.

Lack of Customer Interest

The fourth difficulty affecting the retail furniture trade is the apparent lack of interest on the part of the consumer in the merchandise handled by furniture stores. This is a much more basic and fundamental element in the demand for furniture, and it is difficult to segregate its influence from those conditions which have been considered heretofore. For example, one cannot say whether the infrequency of shopping in furniture stores is caused by the policies practiced by the stores or by a more fundamental reason, the lack of consumer interest in furniture.

The consumer survey of the Millis company[9] revealed that only 18% of the 48,600 housewives interviewed claimed to have a considerable interest in furniture. Thirty-five per cent exhibited moderate interest, 27% very little interest, and 20% were not interested at all. The difficulties of computing such a classification make evaluation of the results practically an impossibility. Nevertheless, there are certain characteristics in regard to consumer buying habits which may support the indications of the figures above.

Furniture is purchased but few times during the lifetime of a family. Once a house is furnished, no replacement

[9] *Ibid.*

takes place in the majority of cases until ten or fifteen years later when the family has reached a higher income level or a new home is purchased. This condition may be caused by the fact that furniture is expensive and wears out slowly, but it is doubtless true that the furniture in a great many American homes would be replaced more often were the consumer more interested in furnishing her home properly. On the other hand, a large volume of information regarding home decoration and arrangement is being printed constantly in magazines and newspapers throughout the country. This would seem to indicate that there is an interest in furniture among housewives, and, therefore, that other elements are responsible for the failure of this interest to express itself fully in the volume of furniture sales.

Thus, it is difficult to say whether or not there is a comparative lack of interest in furniture. Probably it would be safe to say that, while there exists a wide-spread interest in furnishing the home, this interest in many cases is not strong enough to translate itself into actual purchase. There are several causes for this condition. First, a tremendous amount of competition is being offered in the market by other products, new as well as old. Second, the furniture fashion cycle is both obscure and slow-moving. Third, the fact that furniture is expensive and that physical depreciation is comparatively slow causes hesitancy on the part of the consumer to replace the furniture in her home.

Competition of Other Products

The past few years in this country have seen a large number of new articles placed on the market which have grown rapidly in sales volume. The cosmetics industry, for example, which did a total volume of $16,900,000 in 1914, is estimated to have passed the $150,000,000 mark in 1928. In 1908, motor cars were produced to the value of $137,000,000, while in 1926 this figure had increased to $3,214,000,000.[10] The radio industry has reached the billion-dollar class within a few years. Electrical appliances for the home have shown a similar growth.

These, of course, are new articles, and furniture, lacking their novelty appeal, could not be expected to maintain the pace attained by this merchandise. Furthermore, there was a large unfilled demand for these new products which had to be satisfied over a short period of time. But these facts do indicate the tremendous amount of competition which the furniture industry has to meet in striving for a portion of the consumer's dollar. In addition to increasing competition with new products, furniture is facing more aggressive efforts on the part of distributors of older merchandise, such as clothing and bath-room fixtures, because of improved marketing methods in retail distribution as a whole.

The furniture retailer can not, of course, eliminate this severe competition. He can only adopt aggressive selling methods so as to afford the strongest possible competition for other types of merchandise. Many of these new articles have been adopted by the furniture trade and are offered for sale in furniture stores. Most stores in the industry now handle radios and phonographs, and many have taken on a wide line of electrical appliances. A few stores have widened their lines to include all types of furnishings for the

[10] "The Furniture Industry Must Cultivate the Great Secondary Market," by Berman Schoenfeld, *Furniture Journal*, February, 1929.

home and thus have gained some of the advantages of the department store in that their customers may do all of their shopping for the home under the same roof.

Slow-moving Fashion Cycles and Style Obscurities

The second factor which is one of the causes for the lack of sufficient interest in furniture is the fact that its fashion cycle moves particularly slowly. From ten to twenty years is required for a furniture fashion cycle to run its course. Some furniture, notably that termed "Colonial Antique," lasts for many generations.

This slow-moving fashion cycle is, to a large extent, caused by the obscurity of the styles themselves and the consequent lack of consumer familiarity with them, particularly at the present time. Furniture designs, at the present time, are largely based upon those originated during the seventeenth and eighteenth centuries in Europe.[11] There is, consequently, a large number of designs from which to choose, none of which is associated with the element of distinctiveness, since they are available in all price classes of furniture. Furniture design, at the present time, therefore, lacks the prerequisite element necessary to start the swing of the style cycle, namely, distinctiveness. With such a wide variety of different designs and no single basic uniformity, the likelihood of any one design becoming monotonous is much less.

In the past, better examples of furniture fashion cycles have occurred. The Mission style in the early part of this century, for example, was a distinctive type of design which rapidly gained wide-spread popularity. The life of its cycle was comparatively short, its period coming to a close shortly before the World War. The introduction of the new modernistic styles, which are characterized by particularly striking designs, may lead to the return of a more rapid style cycle to the furniture industry.

The dependence of furniture styles upon architecture, both inside and out, is another limiting factor to the speed of the style cycle. Once a home is furnished properly, it is difficult to introduce new styles of furnishing into it.

Arousing Customer Interest

An analysis of the demand for furniture, however, reveals a third factor which may be the primary cause for the comparatively slight importance of style in furniture. The buying motives for furniture may be divided into two classes: those which have to do with the owner's enjoyment in the personal use of the product and those which affect his pride in its appearance to others. The chief elements in the first group of motives are those of comfort, beauty, and utility. Those in the second group include the motive of pride in the home as a show-place for visitors and stylishness.

In the case of automobiles or of clothing, these latter motives often take precedence over the former, because the articles are often displayed before outsiders. Therefore, style plays an important part in their purchase. In the case of furniture, the importance of these latter motives depends upon the amount of entertaining which the individual purchaser does in her home. With those who do little entertaining, therefore, style plays an unimportant part, and, since the proportion of persons who entertain in their homes

[11] Nystrom, *Economics of Fashion*.

is not nearly so large as the proportion of those who wear clothes and drive cars in public, style does not play so important a part in furniture as it does in clothes and automobiles.

The furniture retailer has four possible means of increasing the style interest in his community. The first is by the introduction of "provincial" styles, that is, styles which lend themselves to the atmosphere of the locality in which the store operates. This was the policy followed by the Barker Brothers Company, of Los Angeles, when it introduced "The Monterey," a type of furniture based on the old Mission style and adaptable to the Spanish architecture of Southern California.[12] The use of this type of style merchandising brings in the distinctiveness element and basic uniformity, which aids in speeding up the fashion cycle.

A second method of increasing consumer interest in furniture style is the education of the consumer, through advertising and through style "shows," as to just what furniture styles are and what they stand for. Thus, the consumer will be able to picture in his mind the various styles which exist.

The third factor which is affecting consumer interest in furniture is the fact that furniture is expensive and that it wears out slowly. Furniture brings a much higher unit price than most other articles. One reason for this is that it is purchased in large unit-groups, such as a complete houseful. By the popularization of replacement by the room-ful or in odd pieces, however, the furniture dealer can make some steps toward meeting this difficulty.

Since upholstering can be replaced more cheaply than the complete piece of furniture, there seems to be a considerable market for the sale and application of new upholstering to furniture. The furniture dealer should not fail to exploit this market aggressively.

[12] *Retailing*, November 23, 1929.

Conclusions

Four conditions, therefore: (1) the prevalence of price competition, (2) the changing character of consumer demand, (3) the lack of consumer confidence in the dealers, and (4) the lack of sufficient consumer interest in furniture are the chief problems in the retail furniture trade today. In general, the solutions to these problems center around a change in promotional emphasis. The dealer must accomplish a shift from his present short-sighted practices of price cutting and antagonistic selling to the assumption of a broader viewpoint. He must study the demands and the needs of his customers and adapt his merchandise and his methods to these considerations. This change in promotional emphasis can not be accomplished by the individual dealer in a short period. Obviously, if a dealer's competition continues to exploit cut prices and long credit terms, he can not suddenly shift his promotional emphasis without a serious loss of volume. The shift, therefore, should be gradual, allowing sufficient time for the store's customers to become accustomed to the change.

Retail merchandising methods throughout the country are undergoing rapid reorganization at the present time, and strong competition may be expected in the future. In the face of this, the retailer who clings to the old methods and who follows the lines of least resistance, will most certainly not be the one who survives.

INVESTMENT ADVICE

By R. MINTURN SEDGWICK

IN the days of our grandfathers, investment was a comparatively simple matter. Enterprises were small and there were relatively few of them. Then, too, there was far less capital seeking investment, perhaps not a fiftieth as much as there is today. Money was invested more locally; it was not unusual for an investor, even of moderate means, to know personally an official or director of most of the companies in which he held shares. Today there are listed on the New York Stock Exchange alone over 2,500 security issues the market value of which is approximately $130,000,000,000. Few people can make an intelligent selection among these, even limiting themselves to well-known securities. For example, how many investors can pass intelligently on the relative merits of such familiar issues as the common stock of the Pennsylvania Railroad, the participating preferred stock of the International Match Company, and the debentures of the American Telephone & Telegraph Company? Though an individual using common sense can attain fair results, it is quite evident that investing has become a job for experts.

In the recent bull market a large number of unskilled investors made a great deal of money; many successful speculators regarded themselves and began to be regarded as financial wizards. Such individuals were skeptical of the laborious research and extended investigation advocated by careful investment organizations. The recent debacle in the stock market has shown that money made overnight can be lost overnight. Many individuals who had made large profits in each of the four years preceding 1929 now realize that a successful investment policy is not founded solely on courage and optimism.

Who Gives Investment Advice?

If we agree that investing is a specialized field, we must next see who are in that field, or are ostensibly there, and what their qualifications are. The investment banker, the commercial bank or trust company, the individual trustee, the financial services and, last, the investment counselor—all are available for investment advice in one form or another.

The difficulty of the investment banker's position is that he is not paid for his services as counsel. In order to put his advice on a profitable basis, either he must advise his customers constantly to shift their investments so that there will be material brokerage fees, or he must urge the selection of his own securities which he can sell at a profit. In either case the banker is forced to modify his disinterested investment judgment in order to make a living.

No matter with what good intentions a bond house endeavors to give advice, it is impossible for it not to be prejudiced in favor of its issues. In the case of bonds, there is the selling profit, which may run as high as $50 or $60 a bond; and in the case of new stock issues, the profit may be even greater. Where the banking house foregoes the advantages of selling new issues, it is likely to suggest that customers

purchase stocks or bonds from its own portfolio, in order to secure a good market for these securities and as wide a distribution as possible.

The following situation well illustrates how difficult it is for even the highest-grade security house to resist these temptations. A young professional man went to an investment counselor's office for advice regarding his list of securities. His professional income was sufficient for his necessities, and his main investment objective was growth. His funds, which were in the neighborhood of $480,000, had been invested according to the advice of one of the largest and best-known bond houses in the country. The estate was divided as follows: $185,000 worth of long-term bonds, $45,000 worth of short-term bonds and $250,000 in equities. The interesting thing about the list was that $150,000 worth of the bonds and $100,000 worth of the equities were issues sponsored by the bond house in question. No unprejudiced judge of securities can believe that half the best securities available for investment are put out by one house. The firm may have simply used this account as a convenient receptacle for its own issues. More probably the salesman who followed the account was primarily familiar with his organization's own issues, felt that they were sound, and knew that he made a livelihood by selling them. Not unnaturally he followed the path of least resistance; to select other securities would have entailed extra work without compensation either for himself or for his firm. Fortunately for the client, the house was first-grade and the results obtained were not positively bad, though certainly they were not good; even the elementary rules of diversification were disregarded in that 20% of the equity fund was concentrated in a single company.

The holdings of another individual show what can happen if the bond house is of the second grade. This man, a successful merchant, believed he was getting impartial investment supervision from a security-merchandising organization. His problem was one purely of growth, since he never spent the income from his securities and he added to his investment account very substantially every year from his business income. Notwithstanding this situation, 90% of his holdings consisted of long-term, second-grade and foreign bonds, which had no chance of real growth and the high-rate coupons of which simply helped increase the man's taxes. Of course there was a very high margin of profit in the sale of these bonds, which was doubtless the unacknowledged reason that governed their selection by the investment house. Neither of these cases is materially different from scores of others that come to the attention of the investment counsel.

The trust department of a bank or trust company and the individual trustee are attempting to solve the investment problems of their beneficiaries, but they are handicapped in several ways. In the first place, the trust department of a bank or trust company is likely to be tempted to buy the securities which the bond department has for sale; but this, of course, can be guarded against by providing that no securities shall be bought directly or indirectly from such departments. This provision is frequently vitiated by mutual agreements among banks to buy bonds from one another. Bank A will buy for its trusts only from Bank B's corporation; in return, B will accommodatingly buy bonds for its

trusts exclusively from Bank A. The bulk of the business of such trustees or trust departments consists of trusts under wills, which of course have to be invested with regard to certain legal requirements rather than on strictly investment principles. Following these legal requirements with the bulk of the funds under their supervision, it is difficult for them to shake off this investment attitude when they are dealing with funds not so restricted. A brilliant investor who is on the trust committee of a large bank stated that the reaction of some of his associates to any revision in the holdings of an estate was simply, "What will the Probate Court say?" Men whose minds are thus trammeled can not invest so wisely as those who can look at the problem purely from a practical, economic standpoint.

The personnel of the trust committee of a large bank is not always calculated to insure a shrewd investment policy. On each of the trust committees of two large banks, for example, there are half a dozen men, all of them citizens who have a well deserved reputation for probity and business or legal ability. These names are excellent window dressing, but as a matter of fact on each committee there is but one man whose business is solely the investment of money. There is grave doubt whether the other men on these boards are more of a help than a hindrance. It appears to me very doubtful whether the special abilities which these men have as lawyers or as salesmen or as engineers qualify them as investors. Furthermore, such committees meet but fortnightly, or once a week at best. The members have not time to study carefully the list of securities submitted to their judgment, and must either approve or veto investments with which they are unfamiliar except in the most perfunctory way.

Adequacy of Fees for Investment Advice

A far more serious difficulty which the trustee, whether corporate or individual, faces is the fact that he is inadequately paid for his work; for example, in Massachusetts a trustee receives 6% of the income of a trust for his supervision and responsibility. Let us suppose that a corporate trustee is administering 2,000 estates totaling $100,000,000 in market value; there are not many institutions outside of New York City that have such large funds as these under their guidance. Such funds would yield about $4,000,000 or $5,000,000 income, and the trust company's fees would be in the neighborhood of $275,000. The expenses of the mere mechanical details in connection with these estates would probably swallow up not less than half the revenue, leaving probably not more than $125,000 for investment research and profits. In all probability the net profit of even this figure is inadequate for undertaking the responsibility for the safety of $100,000,000 of property, so that the amount of money left for research is negligible. If this is true of the large institutional trustees, how much would the small institution or individual trustee be able to spend on a fact-finding organization? Probably they would have to content themselves with the manuals which are confined mainly to the past history of individual companies.

The financial services also suffer from an inadequate income for proper research facilities. Most of them offer their services at prices which range from $75 to $150 a year; it is unlikely that for that amount of money they can pay any attention to a client's

individual problems. And, furthermore, it is highly questionable whether they can afford research men of the highest calibre because of the expense involved. There is a further weakness in their situation, and that is their inability to get direct information from corporations, simply because they represent no definite amount of stock; and the services are known to be broadcasting organizations, to which an executive of a company could not properly give confidential information.

Let us now examine how the investment counselor is prepared to meet the needs of the investor. In the first place, his selfish interest is made to coincide with his client's by the method of recompense. The recognized fee for investment counsel is ½ of 1% per year of the principal of an account. The fund is appraised when first submitted for revision, and annually thereafter. The charge is based on the appraised value of the estate at the beginning of each year. The counselor wants the fund to grow in value so that his fee may increase; the client wants the fund to grow, since a larger principal will eventually produce a larger income. This unity of interest is the greatest single advantage the investment counselor has over the investment banker as an investment adviser. Some of the larger banking houses doing an important retail business have realized this situation, and are establishing departments to do investment-counsel work, charging the recognized fee. Unquestionably the prestige and experience of the banking houses starting investment-counsel departments will attract to them many clients, and it is also true that such clients will get better results working through these departments than the same clients would get if they simply dealt with the individual salesmen of the houses in question. But even the investment-counsel department of an investment-banking house will be at a disadvantage as compared with an independent investment-counsel house when meeting certain important problems.

Can Investment Advice Be Disinterested?

An obvious difficulty to be faced is the question of the banking house's own issues. If it recommends any of them to its investment-counsel clients, it will always be open to the suspicion that it is not acting in good faith, that it is lacking in impartiality. On the other hand, should it recommend none of its issues, the clients might from time to time miss an occasional attractive offering. The regular customers of a banking house might ask what was wrong with its issues if it recommended none of them to the clients of its investment-counsel department.

Another problem facing the average investment house starting an investment-counsel department is the fact that the executives have all been brought up in the investment-banking business, which in its last analysis is simply security merchandising. The most skilful merchants of securities are not necessarily the best judges of security values. Furthermore, the investment-counsel department of a bond house will always be simply an appendage, and as such may not command the best brains in the organization. A bond house, as a leading banker has truly said, in reality represents the interest of the corporations which need financing. Investment counselors, on the other hand, represent the investor's interest. It is not easy to reconcile these fundamentally conflicting points of view.

The effort of one house to attempt it might be likened to a firm of lawyers acting for both the plaintiff and the defendant in the same suit.

If human nature were more judicial and were not affected by the necessity for profits, it is possible that a single organization could fairly mediate between corporations needing capital, on one hand, and the investing public, on the other. Because of the keen competition among security houses for new financing, a corporation wanting additional capital is usually able to drive a good bargain. The banker must necessarily make a profit, and he in turn secures favorable terms from the public. The public, which is ignorant and often mentally lazy and therefore not in a strong bargaining position, suffers accordingly. The investment banker has no desire to act unfairly, but because of circumstances he has been forced away from his rôle of arbiter and has become subservient to his own interests and those of his client corporations as opposed to those of the investing public. The investment counsel has become a "lawyer for the defense," available to those investors who are incapable of meeting the plea of security salesmen on equal grounds.

Institutions and individuals of great wealth have in many cases organized research bureaus to study security values. One important life-insurance company is spending in the neighborhood of $250,000 annually on investment research. The officials of that company realize that every dollar they put into their research department is returned to the company tenfold or twentyfold through better investment results. Most individuals, except those who have enormous fortunes, can not afford even a modest investment-research organization of their own. However, by employing an established firm of investment counsel, an individual with even $100,000 is able to get the benefit of a first-class research department, simply because the expense of that department is spread out among several hundred clients having individual funds ranging from $100,000 up to several millions. In other words, an investment-counsel house is really a cooperative, fact-finding organization, which follows closely a large group of companies and interprets its information for the benefit of its clients.

It may be asked whether investment-counsel houses can get the information they desire from companies, particularly from the larger ones, which might be supposed to be indifferent to the attitude of an investment-counsel house. As a matter of fact, the managements of even the largest corporations are disposed, as a rule, to be frank in discussing their affairs with the representative of such a firm. The corporation's attitude is this: it wants its stock held by investors, not speculators; therefore, to encourage the purchase and retention of its stock by investors, it is willing to answer the legitimate questions of the representative of a large group of investors. Furthermore, in most cases the management does not control the majority of a company's stock. It is therefore glad to gain the support of as many of its stockholders as possible. For this reason the executives of a company are willing to be friendly with an investment-counsel house which may represent several thousand of its shares.

Since the investment counselor's fee amounts roughly to twice that of a trustee, and since he is not burdened with the responsibility for the

safe-keeping of securities, his recompense is adequate to maintain a very considerable research department. For example, an investment-counsel house having $100,000,000 worth of estates under its supervision receives annually fees amounting to half a million dollars. The overhead is certainly no more than that of a trustee, and therefore such an organization should have at least $100,000 to spend annually on research work. It is evident that it should be able to do vastly superior investment work because of its ample research facilities.

It is often contended that, in the case of a company getting into financial difficulties, a bond house can represent its own customers' interests better than can an investment-counsel firm. As far as I can discover, investment-counsel houses have had very slight experience in such situations, partly because of their skill in avoiding them in the first place. The following case affords an example of an investment-counsel house that was alive to a recapitalization situation which might have cost its clients and the customers of many other investment agencies in excess of $1,000,000.

Not long ago one of the largest utility holding companies planned to change its financial structure by an exchange of stock. Under the laws of Massachusetts the stockholders in that state would have been taxed on the profits they had in the old stock just as if they had sold it. The investment-counsel house in question learned of the proposed plan and suggested to the management of the company a different scheme which would accomplish the same result and yet would permit the stockholders to escape the tax. The lawyers for the company revamped the recapitalization procedure so that the Massachusetts stockholders escaped taxation. It is estimated that the firm saved its clients in the neighborhood of $100,000 in taxes by its prudence, and that the Massachusetts stockholders were saved in excess of $1,000,000. Though this issue was widely held and must have been in the lists of stocks held by clients of many large bond houses, none of these houses sensed the situation.

The oldest investment-counsel house has been operating just ten years; all the accounts that have been under its supervision for a period of over two years have shown a growth which offsets the fees many times over. Naturally, during periods of business recession the best an investment adviser can do for a client is to prevent his property from shrinking in value as rapidly as it would otherwise. For example, one account of $300,000 was submitted to a certain investment counsel during September of last year. Fortunately the apparently desirable revision was completed by the counselor just before the market crash occurred; the account suffered in the break, but investment advice had saved the fund $25,000 by January 1, 1930, or more than fifteen times the annual fee.

In this paper the facilities of various agencies for investment advice have been enumerated and analyzed. In the course of the discussion only the more important phases of the problem were brought out, but the entire thesis can be summarized in two sentences: Investment advice should be wholly impartial, and like anything else that is worth having it must be paid for adequately. The Simon-pure investment-counsel house is equipped to give advice on these terms; all other investment agencies are handicapped either through inadequate compensation or partiality or subservience to some larger organization having different and frequently opposed objects and interests

PROBLEMS OF THE TANNING INDUSTRY

By RICHARD DONHAM

THE tanning industry is divided into four main producing groups:[1] (1) sole, belting, side-upper, harness, bag and upholstery (from cattle hides), (2) calf and kip upper, (3) goat and kid upper and fancy leather, (4) sheep and lamb upper, glove, lining, and fancy leather. The present discussion is confined primarily to the first two groups and touches upon the others only incidentally. No attempt has been made to solve the problems either of the industry as a whole or of any one of its branches; rather it has been the purpose to examine into the various sources of difficulty and, so far as is possible, to reduce them to fundamentals. The method of approach divides the study into three distinct parts: History, Nature of the Raw-material and Finished-goods Markets, Present Competitive Conditions. A fourth section is devoted to a short summary, the main object of which is to show the interrelationship of the factors involved.

The History of the Industry

Colonial Tanning.—Tanning in the United States began as a household occupation. Cattle were slaughtered locally, and every community soon had at least one man who sank his vats in the stream running through his back yard, and tanned hides in the crude fashion of the day. In 1630, Francis Ingalls set up at Lynn, Massachusetts, what is believed to have been the first tannery to be operated as a business separate from the household.[2] The governing factors in those days were the small investment required and the availability of transportation facilities and of bark supply. Either hides had to be taken to the forests or the forests brought to the hides. Since hides can be preserved by pickling or drying processes, their depreciation rate is very low, and their value, expressed as a ratio to their bulk, is relatively high. Bark, on the other hand, depreciates rapidly both in quality and in quantity if moved any great distance. It is light and bulky and, in addition to being hard to transport, is expensive to store. It was natural, therefore, that our early tanners should locate near the forests. New England at that time had a plentiful supply of hemlock and, for this reason, especially in the towns of Salem and Lynn, became the first center of the tanning industry. As the forests became depleted, tanners moved westward, first into Pennsylvania, and later into Ohio, Indiana and Wisconsin.

In this early history is to be found the explanation for that large number of small, scattered tanning establishments which are an important factor in the present situation.

The Post-Civil-War Period.—Following the opening of the western ranges by the trans-Mississippi railroads and the growth of the Chicago packing-houses, a new situation arose in the form of a centralized hide and skin supply. Larger tanneries were the outcome of this, and larger tanneries

[1] *Commerce Year Book*, 1929, Volume 1. United States.

[2] *Manufacturing Industries in America*, Malcolm Keir, Editor. Chapter XVIII.

brought improved methods. Rule-of-thumb operation was rapidly displaced by methods introduced by chemists who were employed to study processes and products. The first important contribution to the tanner's art was that of tannin extract.[3] It broke the hold the forests had on the industry and made possible its location in places more favorable from other points of view.

In an attempt to produce a fine upper leather which would serve the same purpose as "French kid" and "Morocco"—which had to be imported in large quantities—the chemists next produced, in turn, "American morocco," "patent" leather, and "Vici" kid. This last was the first commercially successful chrome leather.[4] The immediate effect of this discovery was to shorten the length of time required for tanning uppers.[5]

The Situation since 1900.—Since the turn of the century it has become increasingly apparent that our native supplies of tan-bark have been depleted to an alarming extent. Our once-abundant forests have largely disappeared and it is now necessary to import a great part of our tannin-bearing materials.[6] Of still greater interest, however, is the growing scarcity of hides.[7] Decline of ranching on our western plains, and the turn of other cattle-raisers from beef to dairy herds, have not only decreased the hide supply in the United States numerically but also have lowered the quality.[8] Furthermore, concentration of by far the greater portion of the meat business in the hands of the packers has made hides purely a by-product of the meat industry.

TABLE I[9]

Year	1899	1914	1925	1927
Establishments	1,306	741	532	494
Wage-earners	52,109	55,936	53,047	53,047
Primary horse-power	.....	171,712	222,678	225,853
Value added by manufacture (in dollars)	59,038,123	82,956,285	155,380,000	162,897,679

[9] U. S. Bureau of Census.

The large-scale-operation bug has bitten the tanning industry as it has other industries. Table I shows the extent to which this has taken place. The tendency received a strong impetus from the World War. Beginning with 1915, the extraordinary resulting demand far exceeded the possible supply, a condition which continued on through 1919 and ceased only with the crisis

[3] Tannin extract is produced by soaking the bark and concentrating the tannin. This is done at the forest and so cuts down the transportation, labor, and storage charges of the tanner. Since the extract can be standardized, more uniform results can be obtained than from bark itself.

[4] Chrome leather is produced by the use of mineral salts, notably of chromium, iron, and aluminum.

[5] So far chrome tanning has been found impractical for the heavier leathers because of the relatively hard and brittle characteristics of its products, which as a result do not withstand water satisfactorily. Recent experiments, however, hold out hope for the future.—Keir, *op. cit.*

[6] Quebracho, imported from Argentina, is the most important tannin-bearing material in this respect.

[7] Each year American tanners have to go outside the country for from 30% to 40% of the cattle hides needed to fill their requirements.—*Representative Industries in the United States*, H. T. Warshow, Editor, Chapter XII, "Leather," by Allen Rogers.

[8] In any given number of dairy cattle more bull calves and worn-out cows are slaughtered than in an equal number of range cattle. Because their hides are thinner and more "spready," it happens that neither calves nor cows yield as valuable hides as steers.—Keir, *op. cit.*

of 1920.[10] Rapid expansion within the industry took place during this period. In fact, 1919-20 found the industry in a process of still greater expansion on the expectation of an improved foreign demand. By 1921 there was nearly a year's supply in stocks of leather.[11] To add to the discomfort of those interested in leather, there came upon the market, at scrap prices, a vast amount of finished leather released by the Government from stocks accumulated for war purposes.

There can be but little doubt that trouble exists in the tanning industry. The best evidence to this effect is to be found in the profit-and-loss statements of those concerns which publish them. For the past decade a satisfactory profit showing by any company in the field has stood out as exceptional. Owners of private enterprises publishing no statements have nevertheless let it be known that they have made no money since the War. In December, 1929, more than two hundred tanners gathered in Washington and "gave their attention to the problems confronting their industry, one of the few placed on the distress list by President Hoover."[12]

Nature of the Raw-material Market

It is logical to begin a diagnosis of the tanning industry at the source of the raw material. Hides may be classed roughly as "packer" and "country" according to take-off. The classification is significant, since the manner of killing, skinning, and sorting enters into the price, there being a differential which offsets the variation in quality and the uniformity in grading.

It is evident that the world supply is fixed for any but a long period of time. To increase overnight the number of cattle on farms, ranges, or otherwise available for slaughter is not possible. Furthermore, practically no cattle in the world are raised for their hides; the demand for meat fixes the supply. The demand for hides, on the other hand, is dependent upon factors entirely unrelated to the consumption of meat. Thus there arises a condition wherein supply is not synchronized with demand, a state of affairs fully as unsatisfactory as it sounds. To make matters worse, seasonal variations in quantity and quality, together with international competition between the sundry buyers and producers, lend to this apparently inelastic market a high degree of elasticity and place this market entirely outside the control of the parties interested.

In these facts may be found the fundamental causes for the widely and wildly fluctuating levels which characterize the hide market.

Since the cost of raw materials represents about 67% of the value of the product, and since the process of tanning takes from two to six or more months, this fluctuation constitutes one of the most serious problems with which the industry must deal. Among other things—notably the widely advertised economies of large-scale enterprise—the United States Leather Company was organized to overcome this very condition. America's first million-dollar concern, it has never realized the hopes of its progenitors. In 1905, by which time dividends on the preferred stock were 43% in arrears, a reorganization took place, and there have been various readjustments since.

It is reasonable to suppose that the high-handed purchasing policies, adopted by the early Board of Directors

[10] In the period of rapid inventory depreciation which hit nearly every industry in 1920, leather suffered tremendously.

[11] *Commerce Monthly*, Volume IX, Number 9, "The New Status of the Leather Industry."

[12] *Boston Transcript*, December 17, 1929.

of the Company, led the packers to tan hides themselves. The expectation was that the packers could make in leather the profit denied them in the raw material. The net result was hardly a stabilizing of the hide market. Whether it is true or not is impossible to say, figures not being available, but the impression is current that these packers' tanneries are used by them to manipulate the market. When prices are high, the tanning packer is low in production; when prices are low, a large proportion of his hides is diverted to his own plants in an attempt to jockey the rest to higher prices. It appears that, failing to eliminate competition and thus to stabilize prices, the United States Leather Company gained nothing and probably lost a good deal through the inflexibility which its size brought to it. Such, indeed, has been the case with nearly all the large tanners, each year generally proving to be "another year of disappointment."[13]

A more recent attempt to overcome price fluctuations took the form of an organized Hide Exchange. Apparently the results have been anything but gratifying, as evidenced by the fact that it has been characterized by men in the trade as a gambler's paradise. Such characterization was based upon the belief that if actual delivery of hides bought on a futures contract is desired, there is no guarantee that this delivery will be made in the exact grade purchased. A number of tanners have expressed a preference for poker.

Speculation on the Hide Exchange, instead of decreasing price fluctuations, intensifies them. The speculators push quotations up and up until the market becomes top-heavy, then they change their position and "ride the down swoop." A further consideration in this connection is the state of mind of the industry. So demoralized has it become that a rising market invariably finds a rush of buyers; whereas a falling market is allowed to fall, each buyer hoping to get the advantage of the last half-cent drop. One company in particular has gained some degree of fame for its consistent faculty of buying at the top and selling at the bottom.

Nature of the Leather Market

For the last ten years the leather market has been a buyer's market because of over-capacity in the industry. It is limited on the lower side only by the costs of production and the continued ability of producers to absorb heavy losses. It is limited on the upper side by the competition of substitutes. Because it is a buyer's market, it lags behind the hide market on the up-swing and turns coincidently with it on the down-swing. Within these rather elastic boundaries it fluctuates severely.

Progress in industry and science has brought about sharp changes in demand since the War. The rapid rise of the automobile to an every-day necessity has meant less walking. Not only that, but better roads have brought a trend toward lighter footwear (affecting sole leather) and the all-year use of low shoes. Fewer horses have meant less harness leather, less buggy- and hack-upholstery leather. The use of tractors and machines on farms has also cut down the need for harness leather. Closed cars have meant fabric upholstery; gear drives and electric motors have cut deeply into the belting-leather market.

[13] National Leather Company, *Report to Stockholders*, 1923.

The demand for novelties in color, finish, grain, *etc.*, has taken business away from the so-called staples; each line now has a very short life. The popularity of cut-outs, slashes, and perforations in women's shoes has been reflected in a lessened use of leather. And while these apply directly to the manufacturers of uppers, they apply indirectly to the sole-leather producers. Soles are thinner, and there is a wider use of sport shoes requiring rubber soles. There has also been a decided turn away from leather furniture upholstery.

Competition from substitutes, although hitting all branches of the industry, lands hardest on heavy leather. Rubber and composition soles and heels, imitation upholstery, bag, strap, and case leather, fabric belts, all make a growing inroad into business which once was sacred to the tanners. Canvas, cloth, and woven uppers have also come into general use. And luxuries, such as automobiles, radios, amusements, *etc.*, have affected leather as well as other staple commodities. The extent of the recession is shown by the following table:

TABLE II.[14] PERCENTAGE OF DECREASE IN OUTPUT, FROM 1914 TO 1926

Sole leather	−25%
Harness leather	−60%
Belting leather	−12%

[14] *Commerce Monthly*, Volume IX, Number 9. January, 1928.

All this is in the face of a 10% increase in shoe production and a 20% increase in population, as well as of the fact that the capacity of the industry is far greater today than in 1914. The recession is thus aggravated that much more. Perhaps the most important fact in this connection, however, is the increased use of splitting machines, making the same hide go twice as far as formerly.

Competitive Conditions

There is tremendous over-capacity in the tanning industry. This was brought on partly by the war-time expansion, referred to above, and partly by the changes in demand also referred to above. The problem became acute after the 1920 debacle, when Government figures of stocks on hand and in transit acquainted the buyer with the true situation. The difficulty has been hard to overcome for many reasons, chief among which is the variety in types of ownership of tanning establishments.

Packer-owned or controlled tanneries have always been a bane to the industry. In large production the tanning packer is ruthless in his competition for desirable accounts, his main object apparently being to sell in the form of leather his excess production of hides. The profit or loss resulting from this is apparently not considered so long as the hides are moved. It may be that the haphazard merchandizing of the tanning packer is a far-sighted move to demoralize competition and to leave him in a more favorable position once this end has been accomplished. There certainly is no incentive for the packer to scrap his plants, since he is aware of the threat which their existence constitutes to the rest of the industry. Through their existence the packer becomes at once the primary source of supply and a competitor to other tanners. To maintain this situation he is willing to stand considerable losses. He has stood them for some time, none of the tanneries owned by these interests having been successful over a sustained period.

Because of the demoralization in the field, many of the large shoe manu-

facturers have established their own tanneries in an effort to stabilize their raw-material costs. To this end they have purchased existing plants, but they have run them at full capacity on the strength of an assured outlet, in this way adding seriously to the over-capacity of the industry. By paying careful attention to standardization of raw material, low costs and quality production, the tanning shoe manufacturer has been able to produce a very exceptional and low-cost leather. Typically he is well organized and has tremendous buying power. The effect of the tanning shoe manufacturer on the rest of the industry has been a double one. In addition to adding to the capacity, he has taken from competitive bidding a large part of the tanner's market for his products. The door is closed to packers and independents, except for the small residue needed by the manufacturer over and above what he tans himself. Like the packer, the tanning shoe manufacturer constitutes a threat which gives him strong bargaining power.

There are still many privately owned small and scattered tanneries. Generally speaking they are old, inefficient, and useless for any purposes other than the manufacture of high-cost, low-quality leather. They could not be sold except at enormous capital loss. The owners of these plants are on the whole without knowledge of costs and are continually encroaching on principal without realizing it. Members of the family eke out a satisfactory living from salaries, and family pride is strong, the business having been handed down for generations. The personnel lacks acquaintance with any other line of trade, and fear of the new prevents a shift's being made even by those persons who would be willing to get out if they could. Because they are able to get credit—many of them buy their hides on domestic letters of credit—they manage to hang on. Optimism, the belief that better times are coming and that some other fellow is worse off than they are, adds to the difficulty of driving them out of business. They are dangerous competitors in the sense that "an ignorant man can do more harm to an industry than a crook." They are partly responsible for the continued presence of over-capacity in the industry.

Although there are but few publicly owned companies in the field, they are very large. Their ability to suffer huge losses, to reorganize and to go on again, makes possible a large volume of output. In their inception they were in the main wrongly set up, the management has changed hands frequently, and the ownership is so widely scattered that no one has stepped in and taken control to see that things are run more carefully. Absentee ownership has made it necessary for an executive to attempt to get immediate results and has made building for the future an impossibility. Generally the equipment is not the most efficient and the overhead is stupendous.

Merchandising Methods

The same factors which have led to the continued over-capacity of the leather industry have had other effects of real importance. The industry has lagged behind in the new era of strategic merchandising just as it lagged behind in the era of production following the Industrial Revolution. Even today, leather merchants as a whole tend to sit back and let the customers come to them. Proper merchandising includes: determination of what goods to produce in order to meet actual or

potential demands, what changes to make in existing products, what styles or finishes to provide for, what methods of packing to adopt, what products to discard, and what quantities to make.[15] This applies to sole leather as well as to upper, and has been wofully lacking in both. The success of Proctor, Ellison Company in the sole-leather field—where the merchandising opportunities seem offhand to be distinctly limited—has nevertheless been due in large part to a proper understanding and handling of these problems. Too many companies have been willing to sell their customers not what the customers want or should have, but goods which they themselves wish to dispose of.

This poor merchandising has another angle which is in part the result of the demoralization brought on by factors already discussed. Cutthroat competition and unfair trade practices have added seriously to the difficulties. Julius Klein, in a recent address to tanners, declared, "There is no doubt that in the tanning industry there is . . . much loss of confidence and distrust engaged in by rumors of price cutting, unfair competition, and unethical practices. In the large percentage of these cases the rumors are found to be without basis of truth, or at least greatly distorted." Klein, in all probability, states the matter mildly. From reliable statements made, it is apparent that salesmen from well-known houses, on failing to sell their leather on a competitive basis, have begged the buyer to name his own price. One instance is known where it is the company's policy to honor a customer's statement that he can buy cheaper from a competitor, and to meet that price without further inquiry. As a matter of fact, great surprise was evidenced in one case where a firm found it necessary to pay nearly the market for leather over a two-year-period—evidently an unusual state of affairs. And even if Klein's diagnosis is accepted, the harm done by rumors is often as great as if the rumors were true. The only way to stop such reports is to remove all actions which may give rise to them.

Under the heading of poor merchandising, two further factors may be considered. The first of these is the export situation, the second is the growing use of substitutes for leather. Table III below shows the course of imports and exports over the last few years, and expresses the loss that has come to American tanners through improper realization of the market they are leaving undeveloped.

TABLE III. VALUE OF EXPORTS AND IMPORTS OF LEATHER
(In thousands of dollars)

Year	Exports	Imports
1920	108,876	19,324
1922	45,471	11,472
1924	49,188	17,077
1925	52,155	22,412
1926	49,815	28,622
1927	54,003	37,436
1928	55,165	43,308

Bureau of Foreign and Domestic Commerce.

Although tanners in the United States are running at less than 70% of capacity, they are exporting only about 10% of their output. The more important producing countries abroad export 20% to 25%. Part of the reason for this is to be found once more in unfair trade practices. American tanners have been wont to send a

[15] *Report of the President's Committee on Recent Economic Changes*, 1922–29, "Marketing," by M. T. Copeland.

foreign customer some kind of merchandise just to fill an order, whether the goods be what he ordered or not.

The other factor, the growing use of substitutes, may best be covered by quoting from H. S. Wanson, of the International Shoe Company, who has made a detailed study of the question.[16]

"It is most unfortunate, but seemingly inevitable, that so long a time should elapse between the advance in the price of hides and the advance in the price of cut stock. If the effect, and by that I mean the increase in the use of composition soles, followed more closely the cause, and by that I mean the pushing of hide prices much beyond 16 cents, the tanners and possibly the packers themselves would realize more clearly what high prices for hides will ultimately do to the sole-leather industry." Wanson advocates changing the slogan "Nothing Takes the Place of Leather" to "Nothing Takes the Place of Leather Made from Sole-leather Hides at 16 cents a Pound or Less." It is poor merchandising to let the price of leather go up to the point where substitutes come in on any large scale.

Conclusion

In summary it may be said that the problems of the tanning industry are traceable to three sources, each of which alone presents a serious difficulty: the nature of the hide market, the nature of the leather market, and competitive conditions within the industry. The interplay of all three gives rise to further complications.

The raw material is a by-product of the meat industry, and as such the world supply is inelastic. This inelastic world supply, however, is rendered elastic at any one point by competition in international trade. These factors result in a non-adjustable supply and demand which is inevitably the cause of wide fluctuations in price.

In the leather market, three elements are outstanding: rapidly changing styles for upper leathers, severe competition from substitutes for sole leathers, and a recession in the demand for both. Price fluctuations are therefore prevalent here also, although the up-swings are slower and the down-swings are faster.

These rapid price movements, over-expansion of plants and changes in the demand for leather have resulted in over-capacity and demoralization. This state has continued because of the varied interests and circumstances of the different types of ownership peculiar to the industry: tanning packer, tanning shoe manufacturer, privately owned independent, and publicly owned independent. Partly because of these types of ownership, and partly because of demoralization, many complications have arisen in the form of panicky buying, poor merchandising, unfair competition, and inability to meet new conditions.

The final picture is not very encouraging: the tanners, pressed on one side by raw-material prices outside their control, and on the other side by changes in demand and competition from substitutes in the price ranges which would otherwise be profitable, are having to deal simultaneously with over-capacity and complete demoralization.

[16] For further reference see *Hide Prices and the Consumer Attitude Toward Leather*, pamphlet printing of statement by H. S. Wanson before New England Shoe and Leather Association, April 24, 1929.

MOUNTAIN-MOVING IN SEATTLE

By V. V. TARBILL

IT was not just a happen-so that Denny Hill stood in the middle of Seattle's expanding business district. The matter was quite intentional. The founders of the city very deliberately selected the flanks of Denny Hill as the site of a city which they believed would become the New York of the Pacific Coast. The city of their founding grew even more rapidly than they anticipated, and soon surrounded Denny Hill. The Hill was too high and too steep to be utilized for business purposes, so that inevitably (at least so it seems at the present time) the Hill had to be removed, somehow or other.

Removing of the Hill began in a small way at the time of the Klondike Gold Rush, in 1897, and has proceeded by installments since then. At first it was done with plow and shovel, team and wagon; later steam shovels and electric cars were used; then came the hydraulic giants, which sluiced the dirt into the harbor; and now the balance of Denny Hill is being transported on a series of endless belt conveyors to the waterfront, where self-dumping scows drop the dirt into Elliott Bay. By the end of 1930, the last of Denny Hill will have disappeared beneath the waters of Puget Sound.

Denny Hill and the Growth of Seattle

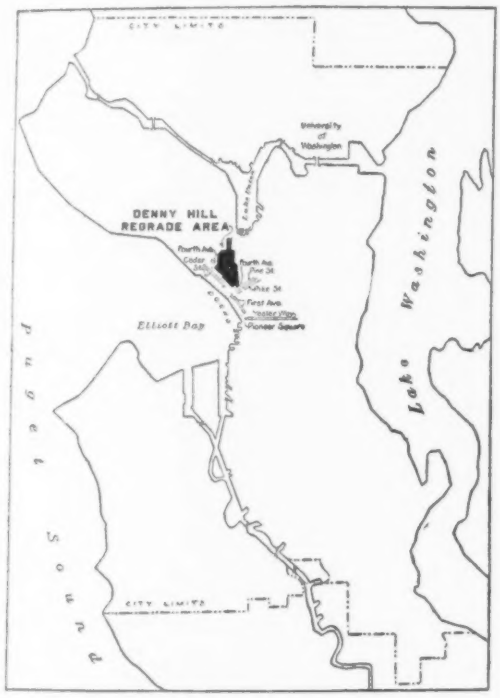
Arthur A. Denny, W. N. Bell and their associates, the founders of the city, in the days of 1849 were land seekers. They wanted homesteads on the Pacific Coast. It was their theory that the best harbor in the Pacific Northwest would some day be the terminus of a transcontinental railroad. They felt that, if they could find that harbor and locate their homesteads on its shore, they would profit by the future increase in value of the land. In 1851 they decided that Elliott Bay, an arm of Puget Sound, was the harbor for which they were looking, and in the fall of that year they disembarked on the shore of Elliott Bay.

The land here was far from attractive from the agricultural standpoint, for it was rough and hilly, and covered with a dense growth of huge fir trees. The steep bluff of what afterward became known as Denny Hill looked somewhat forbidding, for it stood in the center of the ground they wished to acquire, immediately adjoining the deep water of the Bay. But here was the harbor they were seeking, and they had to take the land as they found it. So in 1852 these pioneers took up their homesteads, or "donation claims," as they were then called, covering the slopes of Denny Hill, and even including the top of the Hill itself. At first they busied themselves with the tasks of hewing homes out of the wilderness. Then after a few years, A. A. Denny, who was a surveyor, surveyed and platted all the claims, cut them up into lots, streets, and alleys, and the pioneers all went into the real-estate business.

On the south side of the Hill, A. A. Denny's plat became the village of Seattle, clustered around Henry Yesler's sawmill. On the north side, Bell's plat grew into the village of Belltown, with a barrel factory as its chief industry. The two villages gradually grew together, surrounded Denny Hill, and

merged into the town of Seattle. In 1883 the long expected transcontinental railroad arrived, and Seattle grew into a city. Now there are five transcontinental railroads, and the population has increased enormously. With the increase in population, the business district kept expanding, and Denny Hill, which had become a very close-in residential district, surrounded by business, was in the way.

Outline Map of Seattle



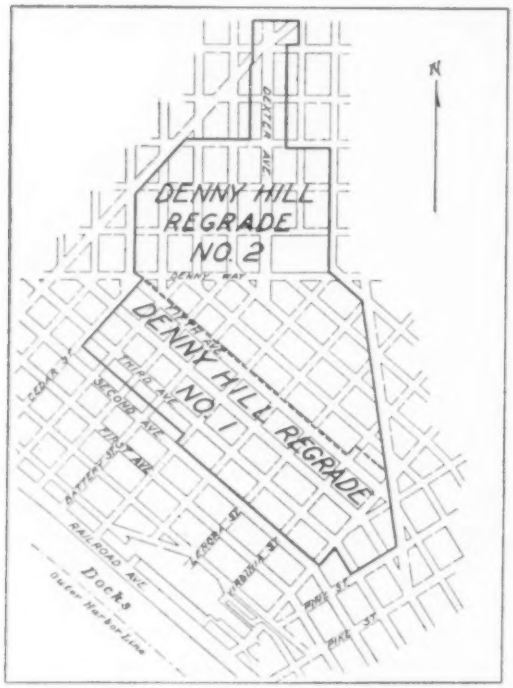
To appreciate fully the manner in which Denny Hill has stood in the way of the full development of Seattle's business district, it should be understood that Seattle is a north and south town. It is built on a relatively narrow neck of land lying between Puget Sound on the west and Lake Washington on the east. The residential growth has to be north or south, it cannot be east or west. Due to the location of the State University in the north part of the city, the greatest residential growth has been to the north, with a consequent pull to the north on the business district.

The business district itself was hemmed in between the harbor on the west and a very long hill on the east some 400 feet high. It could only grow north or south; and it could hardly grow south, for on the south was originally a tide flat covered by shallow water at high tide. This tide flat has more recently been filled in, but not until after the northward trend of the business district was established. Subsequently the tide flats have been devoted to industrial purposes, and this has continued to prevent expansion of the business district to the south.

The result has been a relatively rapid growth of the business district to the north, with a consequent shifting of the retail center. In 1898, the retail center was at Pioneer Square, First Avenue and Yesler Way. In 1930, the retail center is at Fourth Avenue and Pine Street, thirteen blocks away. This means a shift in the retail center of about one block every two and a half years.

In 1897, came the Klondike Gold Rush to Alaska. Seattle had then a population of about 60,000 people. Almost overnight it became the outfitting point for ships of every description bound for Alaska, carrying passengers and freight of every description. Business grew by leaps and bounds. Here then was the situation. The business district on the south side of the Hill was built up right to the foot of the Hill, where it came to a precipitous slope and stopped. There was considerable business development on the north side of the Hill; there was no direct connection between the two districts; the Gold Rush was on;

and business was expanding rapidly. In this situation it was not so difficult to secure the signatures of a majority of the property owners on First Avenue, and to cut First Avenue through at the western margin of Denny Hill, from Pike Street to Cedar Street. This work was completed in about a year's time, and marked the first step in the removal of the Hill.



About 1902, an agitation started to regrade Second Avenue. Property on Second Avenue at Pike Street was worth perhaps $2,000 a front foot; but 120 feet away from that, where the Hill was very steep, Second Avenue property was worth only $100 to $200 a front foot, and values were still less farther up the Hill. The incentive was very strong for these property owners to grade their lots down and cash in on these values. After much difficulty, Second Avenue was cut through the Hill from Pike Street to Cedar Street, and completed about 1904. About the same time Pike and Pine Streets were regraded from Second Avenue to Fifth Avenue.

These regrades resulted in such an increase in ground values for the property brought down to grade that many property owners on top of Denny Hill began to feel they could profit if the whole Hill were taken down. The matter was agitated, meetings were held, and petition after petition was circulated. But the matter was not at all easy. Here was Denny Hill, covering an area of some 62 city blocks, 240 feet high, and 107 feet above the highest point in the business district. The cost would be enormous. The property regraded would have to pay the entire cost. Many property owners were afraid they would lose their property because they could not pay the assessments. Finally a sort of compromise was reached, and it was decided to regrade the half of the Hill nearest the harbor, an area of about 27 city blocks, extending from Pine Street to Cedar Street and from Second Avenue to Fifth Avenue. This area later became known as the First Regrade, or Denny Hill Regrade Number One. An ordinance was passed in 1906 authorizing the work. Work was actually started in 1908 and completed in 1911.

The Mechanics of the Regrading

The method used in removing the dirt in Denny Hill Regrade Number One was that of sluicing with hydraulic giants, quite a common method in placer-mining on a large scale. Water was pumped from Lake Union, a mile and a half away, by gigantic electric pumps through a 24-inch woodstave pipe to the top of Denny Hill at the rate of about 20 million gallons of water per

day. This water was distributed through five hydraulic giants, at a pressure of about 125 pounds at the nozzle. These giants played the water on different parts of the hill. Water theoretically will pick up about 10% of its volume in dirt and carry that dirt away. Actually the percentage is somewhat less, varying with conditions. The water, with its load of dirt, was then run through ditches and flumes lined with wood paving blocks or steel plates to prevent abrasion by the particles carried, and delivered to a central tunnel also similarly lined. The tunnel came out on the side of the hill and emptied into a flume which was carried out on a trestle over the bay, and the water with its load of sediment discharged into the bay.

The hydraulic method of removing Denny Hill Number One was perhaps a little slow, but it was sure and steady. There were few shut-downs, except when it was necessary to reline the flumes and tunnel. At one time the contractors ran for 47 days straight without a shut-down. The hydraulic method was very efficient also. Many of the houses that were to be removed from the hill did not have to be torn down. They were simply undermined by a stream of water, and when they tumbled into the hole they were set on fire, with no danger of the fire spreading and getting away, with such a stream of water at hand. Then many of the boulders which were found in the glacial clay of which Denny Hill is composed, were also carried away by the water. It is hard to realize that running water has such force, but it is a fact that boulders weighing up to 2,700 pounds were dumped into the flumes and carried out into the bay. One rock of such shape that it would roll, weighing 3,000 pounds, was carried away by the water. The heavier rocks had to be handled, but this was without expense to the contractor, because such rocks were in demand by the landscape architects for rockeries, and they were removed free of charge.

Under the hydraulic method, several apartment buildings were lowered from the top of the Hill and set on new foundations after the dirt was removed. It was necessary to build a falsework or cribbing of blocks under the structure, which was added to on the bottom as the dirt was washed away, until finally the building was left standing high in the air on its cribbing. Then the building was lowered as the cribbing was removed.

The removal of Denny Hotel was more of a problem than that of the apartment buildings. It was the largest and finest hotel in Seattle, and stood on top of the Hill, a hundred feet up in the air. Moreover it stood right across Third Avenue, for Third Avenue had never been opened through the double block occupied by the hotel. This building had to be torn down; but such was the expected increase in value of the ground that the owner of the hotel wrecked the building himself, asking no damages whatever, and permitted the city to remove the dirt.

Regrading half the Hill helped very materially, of course. Business gradually pushed up into the regraded area, but still that area did not derive full benefit from the improvement. Although traffic could now move northwest and southeast on First to Fifth Avenues, there could be no cross traffic from northeast to southwest, because the balance of Denny Hill was still in the way. Much of the business district thus created came to be regarded as relatively undesirable, because of its poor accessibility. After the initial increase

in ground values resulting from the regrade, values remained rather stationary in most of the area for a period of about fifteen years. And as for the property on that part of the Hill that was not regraded, values slumped to nearly nothing. No one would repair or paint a house or flat building, because of the hope (or fear) that another regrade would soon take place. And so the remainder of the Hill became a very cheap and undesirable residence section.

Regrade Number One was completed in 1911, when the population of Seattle was about 240,000. Fifteen years later the population had almost doubled. Naturally the business section had grown proportionately. The remainder of Denny Hill, which now became known as Denny Hill Number Two, was more of an obstacle than ever.

Regrade Number Two

Merchants and property owners in the vicinity of the retail center at Second and Pike became insistent that an arterial street should be cut through Denny Hill to give better access to and from the north end of the city. This was logical enough, because the northbound traffic from the retail center had to go around Denny Hill Number Two, either on the east side or on the west side. Most of it preferred to go on the east side, with the result that the retail center showed signs of shifting from Second Avenue to Third and Pike or to Fourth and Pike. The demand was made on the City Council that Dexter Avenue be cut through Denny Hill and extended south of Denny Way in a straight line to First Avenue and Virginia Street to furnish a direct artery from the north end to the retail center. And the demand was wonderfully insistent. The Denny Hill Improvement Club, organized by the property owners, opposed the Dexter Avenue Extension on the ground that it would create more triangular blocks, of which there were already too many, and that it wasn't necessary. The Second Avenue merchants and property owners insisted that it was necessary, and they kept on insisting, until the officers of the Denny Hill Improvement Club concluded that the best way to solve the problem was to take the whole Hill down, as should have been done twenty years before.

Petitions were put in circulation calling for this improvement, with the cost to be assessed against the property benefited. Almost no opposition was encountered, for everyone seemed to be thoroughly sold on the idea that Denny Hill Number Two had to come down. The necessary condemnation ordinance passed the City Council, and the contract for the work was awarded late in 1928, calling for completion in the fall of 1930.

In Regrade Number One, the removal of dirt was handled in one contract, and the paving of streets, sidewalks, sewers and water-mains were handled separately in the usual haphazard fashion. The result was that many of the improvements were late in being installed and development was retarded thereby. In Regrade Number Two, the one contract includes everything, removal of dirt, paving of streets and sidewalks, sewers, water-mains, and even cluster lights for street lighting. Thus, when the contract is finished, the district will be completely ready for occupancy, and the property owner need not be deprived of the use of his property any longer than the time necessary to erect a new building.

Denny Hill Regrade Number Two is being accomplished by the use of a series of endless belt conveyors, a method said to be entirely new as applied to a re-

grade job. A covered trestle has been built from the edge of the Hill at Fifth Avenue and Battery Street to the waterfront at the foot of Battery Street. This trestle carries the main belts which convey the dirt in an endless stream over the intervening streets and business district. These belts are 36 inches wide, and there are three of them. The first section is 950 feet long, from Fifth Avenue to Third Avenue. The second section, 1,500 feet long, extends from Third Avenue to Railroad Avenue. The third section, 400 feet long, runs out on a dock to a hopper which dumps into the scows.

The dirt moves very easily once it gets onto the main belt. The harder problem is to move the dirt from the Hill onto the main belt. Denny Hill is underlain largely by hardpan, which the ordinary steam shovel will not handle efficiently, and blasting to loosen it up is prohibited in such close proximity to the business section. Therefore five huge electric shovels are being used to handle the dirt. A series of endless belts in 250-foot sections carries the dirt from the electric shovels to the main conveyor, and these 250-foot sections are portable so that they may be moved from place to place as the dirt disappears. To dump the dirt onto the portable belt sections from the electric shovels requires a specially built hopper for each shovel. This hopper has a "grizzly" on top, consisting of a series of parallel steel bars, which breaks up the larger lumps as they are dumped by the shovel and "patted" if necessary by the shovel bucket to force the lumps through the grizzly. At the bottom or throat of the hopper is a motor driving a slow-moving mechanism much like the tread on a caterpillar tractor. This mechanism feeds the dirt slowly from the hopper and drops it on the moving belt in such fashion that it is fairly evenly distributed along the length of the belt.

When the dirt reaches the harbor end of the main conveyor, two self-dumping scows are available to carry it out to deep water in the bay. While one scow is being towed out and dumped, the other scow is being filled. These scows were designed and built especially for the Denny Hill Regrade Number Two. They are so constructed that the top and bottom are the same, and they may be used either side up. Capsizing tanks are built into the scow and so arranged that when a sea valve is opened and the tanks fill with water, the center of gravity is shifted, causing the scow to stand on edge and then flop completely over. When relieved of its load of 400 cubic yards of dirt, the capsizing tanks are high enough out of the water so that they automatically empty, and the scow is then ready for another 400-yard load. It takes about 3 minutes to dump a scow in this fashion, and 40 minutes for a round trip from the dock and back again.

Under this method of operation with electric shovels, endless belts and self-dumping scows, dirt is moving from Denny Hill Number Two to Puget Sound at the rate of approximately 12,000 cubic yards per day. This rate will be increased shortly to 15,000 cubic yards per day, so that by the end of 1930 the last of Denny Hill will have disappeared.

Economic Benefits of the Project

The query as to whether such a large-scale regrading operation really pays is perhaps a little hard to answer with figures. In the case of the speculators, those who bought lots before Regrade Number One took place, with no intention of improving them, but simply

with the idea of making a profit, it may be said that many of them lost. Those who sold out early, while the excitement was at its height, profited well. Those who held on, and had to pay the assessments for the regrade, new paving, and the like, with no income from the property, very generally lost money, and some of them lost their entire investment. In the case of the investors, those who bought with the intention of improving, and who actually did improve their properties, the result was almost invariably a very substantial profit.

With the approach of Regrade Number Two, very marked increases in ground value took place. Lots on top of Denny Hill Number Two that were worth $2,000 to $4,000 before the regrade was imminent, with no buyers in sight, have sold for from $20,000 to $40,000 a lot since the regrade was assured. A double corner on Fifth Avenue, across the street from Denny Hill Regrade Number Two, sold for $65,000 before the regrade was a certainty. Since the regrade was assured, this double corner has sold successively at $135,000, $160,000, $180,000, and $200,000. These figures, although not furnishing an exact index number as to the increase in values, may convey a fair idea of what the average real-estate buyer thinks as to the probable effect on values of Regrade Number Two.

The property at 2,018 Third Avenue, between Virginia and Lenora Streets, may serve as an indicator of the increase in ground values through both regrades. From 1891 to 1897, this was the home of a Y. M. C. A. Secretary, who afterwards made a fortune in the Klondike. He sold the property, in 1897, for $3,500. While Regrade Number One was in progress, it was resold for $10,000. Later still, it sold for $25,000. In 1927, the writer bought it for his own company for $50,000. Late in 1929, an offer of $75,000 was refused.

In carrying out these regrades, it was necessary to utilize the right of eminent domain to condemn certain property, because of the fact that a few property owners would oppose the improvement. The City Council by ordinance would authorize the condemnation, but only after presentation of a petition for the improvement, signed by a majority of the owners of the property involved. The ordinances as passed would call for the regrading of certain streets, involving the removal of the dirt from the streets, but not as a matter of fact calling for the removal of the dirt from private property fronting on those streets. It was optional with the property owner as to whether or not he had his dirt removed from his lot. If he wanted it removed, the contractor who did the work had to remove it at the same price per cubic yard that he received for removing dirt from the streets. Most owners had their dirt removed, but a few obstinate ones refused, leaving their isolated lots with high pyramids of dirt, popularly called "spite mounds." The city had to remove part of the dirt from them, because it was necessary to slope back at an angle of 45 degrees from the street line to prevent the remaining dirt from sliding into the street. But ultimately these owners, before they could utilize their lots, had to remove their "spite mounds" by truck, at a much higher cost to themselves.

Three factors were involved in settling the costs of these regrades. First was the condemnation award for buildings. Any buildings to be destroyed by the regrade were appraised, and the appraised value awarded to the property

owner. Then a theoretical damage was determined, supposed to represent the damage to the property owner caused by lowering the grade of the street, providing the dirt was not removed from the property and it was left standing high in the air. These two awards were paid to the property owner in cash. To the totals of these two awards for the entire district to be regraded, was then added the third factor, the cost of the physical work of regrading and repaving the streets, new sewers, water-mains, and the like. This grand total represented the total cost of the improvement, and this cost was assessed against all property benefited by the improvement, in proportion to the benefits derived. The making of these two awards and the assessment roll to distribute the total cost were all worked out by the Eminent Domain Commission, which has charge of all condemnation proceedings for the City of Seattle. A court hearing had to be held after notice to all property owners, and the awards and the assessment roll approved by a judge of the Superior Court.

Under the law in effect prior to Regrade Number Two, the cost of this improvement was met by 10-year serial local improvement bonds, in the same way that street paving would be handled. Ten per cent of the principal had to be repaid each year by the property owner assessed, together with interest (usually 6%) on the unpaid balance. This arrangement, while satisfactory enough to handle the relatively low cost of street paving and similar improvements, was found to work a hardship in the case of regrading a large area, because of the high costs involved. Substantial benefits from such a radical improvement did not materialize generally for several years, while repayment of principal started the first year. Many property owners either did not or could not improve their lots, made vacant by the regrade, and with no income from their properties, some were forced either to sell out at a loss or to default on the payment of the assessment installments. Those who defaulted on the payments were of course subject to foreclosure, and a number of property owners lost their properties completely through foreclosure for assessments.

To correct this situation, before Regrade Number Two was started, a special act of the Legislature was secured, authorizing the issuance of 22-year serial local improvement bonds. Under this act, Regrade Number Two is being paid for with 22-year 5½% bonds, on which nothing but interest is paid for the first 12 years. From the 13th to the 22nd year, 10% of the principal is paid off each year, together with interest on unpaid balances, so that the entire indebtedness will be liquidated by the end of the 22nd year. This will make the financial load of the individual property owner relatively light for ten years after the completion of the improvement, during the time that he is erecting a new building and getting the property on a paying basis.

As a result of this plan, there has been almost no distress selling of real estate because of the regrade; and ground values have advanced consistently both in the area to be regraded and in the surrounding districts. All opposition to an improvement so radical that it appears to verge on confiscation, has disappeared. Seattle seems unanimously in favor of adding a square mile of level area to its expanding business district by removing the balance of this mountain and casting it into the sea.

MARKETING PROBLEMS IN THE AVIATION INDUSTRY

By CHARLES I. GRAGG

DURING 1929, the aviation industry presented a striking example of that stage of development, common to most industries, in which the transition from emphasis on production to emphasis on marketing becomes urgent. In the early months of 1930, there were many indications that the industry was beginning to recognize the need for this change in emphasis and was undertaking to formulate aggressive marketing policies. It is the purpose of this article to summarize briefly the events leading up to the transitional stage, the major marketing problems which the industry faced and is facing in making the transition, and the lines along which an analysis of these problems may be expected to proceed. The discussion is limited to the marketing of airplanes and airplane motors to civilian buyers. Lighter-than-air vehicles and accessory equipment are not considered, nor is attention given to current problems of sales to the Government.

The Early Period of Development

The aircraft industry may be said to have emerged from its preliminary experimental period by 1914. In that year there were 16 establishments in the United States manufacturing complete aircraft, with an average of 168 employees each and an aggregate annual production valued, at final selling prices, at a little more than $1,000,000. During the war period which followed, the number of establishments doubled and the value of products at selling prices increased to an aggregate of approximately $20,000,000 in 1919.[1] The period from 1919 through 1925 was one of little or no increase in value of output. Broadly, the years from 1914 to 1925 may be said to have included the chief technical developmental phases of the aviation industry. During those years the principal market for aircraft was the Government; nearly all the Government demand was for military airplanes and airplane motors. Sales to the Government were made almost wholly by the officers of the manufacturing companies. The method of sale was to make a formal bid and to submit one or a few planes or motors to be tested. After exhaustive tests, during which the manufacturing company often had to make substantial changes in design and construction, the planes or motors were finally accepted or rejected. Under these circumstances, the function of selling was naturally subordinated to the technical manufacturing task of meeting the rigid specifications of the Government. So great, in fact, was the emphasis on design, construction and materials, that attention to sales policies and sales organization was almost non-existent. There was little spontaneous demand for aircraft from civil sources and practically nothing was done to develop such a demand.

On the other hand, technical improvements followed each other in rapid succession. Planes and motors,

[1] United States Department of Commerce, *Biennial Census of Manufactures 1925*, p. 1,085. See David H. Strother, "The Outlook for Aviation," HARVARD BUSINESS REVIEW, Jan., 1930.

through the process of rigorous testing and engineering study, were brought to a relatively high state of safety, dependability and economy of operation. Substantially all types of planes and motors were involved in this developmental process; these types ranged from single-motored, one-, two- and three-passenger-open-cockpit planes for pursuit and combat purposes up to large bombing, transport and hospital planes. Thus the military specifications of the Government afforded essential experience in developing planes of the type which subsequently were to tap the largest strata of demand for planes for civil use.

This period of technical development and Government purchase was a fortunate one in that it brought the products of the industry to a stage of reliability which was essential if the wider civil markets were to be cultivated successfully. The disadvantage of the period was that it failed to provide the industry with basic market knowledge and experience.

The Beginning of Civilian Demand

The letting of air-mail contracts by the Government provided one of the first powerful stimulants of civilian demand for planes. The policy of the Government was to let these contracts to private operators instead of creating a government-owned or operated system of air-mail lines; this policy encouraged the purchase and use of airplanes by individuals and business firms on a profit-seeking basis, although use of airplanes for profit-making purposes had been spreading slowly during the post-war period through the more or less sporadic activities of "barn stormers," commercial photographers, air-taxi service and crop-dusting operators. The main stages in the development of civil demand, however, started only in the period after 1925. The existence of air-mail service, the long-distance flights of Lindbergh and others in 1927, the spreading knowledge of Europe's well-developed passenger service, all served to stimulate widespread public interest in aviation and to lay the groundwork for commercial marketing of planes on a substantial scale.

The years 1926 and 1927 saw many manufacturers of aircraft and aircraft motors preparing to supplement their sales to the Government with sales to civil buyers. In 1928, considerable expansion both in physical plants and in plans for supplying civil demand were common in the industry, and during 1929 the productive capacity reached a point substantially in excess of the requirements of the market. Until about the middle of 1929, it seemed that the spontaneous increase in civil demand for airplanes was sufficient to care for the constantly growing output. This demand came from air-transport companies, which had increased rapidly in number with the granting of air-mail contracts, from operators of flying schools, persons offering air-taxi service, persons using airplanes in other profit-making ways, individual owners, and business firms.

During the period of rapid expansion of civil markets, airplane manufacturers patterned their marketing methods closely on the methods used in the automobile industry. Aside from sales to the Government, the marketing procedure of airplane and airplane-motor manufacturers in general was as summarized below:

1. Motor manufacturers sold their products to airplane manufacturers for installation in new planes.
2. Airplane manufacturers sold completed planes, equipped with motors, to

wholesale distributors at a discount between 15% and 25% off retail list price.

3. The distributor resold to retail dealers whom he selected and to whom he allowed a discount of between 10% and 15% off retail list price.

4. The airplane manufacturers also sold directly to large users, usually transport lines buying planes in fleets.

5. Advertising was confined typically to magazines devoted primarily to aviation interests, which had come into existence during the preceding few years.

It became increasingly evident during the latter part of 1929 that the broad policies indicated above were not working satisfactorily. Perhaps the most significant symptom of the failure of this marketing system was that the distributors and dealers typically were unable to make a profit from the handling of airplanes and consequently were expected by the manufacturers to eke out their incomes by means of auxiliary activities. These auxiliary activities included the sale of accessories, the operation of flying schools, and the performance of taxi, charter and photographic services.

The marked excess of capacity for production in relation to demand and the unprofitableness of the distributing system indicated that one or more of the underlying marketing problems of the industry had not been adequately solved, and it is upon these problems that the attention of the industry now is focusing. They may be classified as follows:

Who are the potential purchasers and users of aircraft?

How expansible is the market?

What system of distribution best will reach the potential customers?

What advertising and sales appeals will prove most effective?

The Market for Airplanes and Motors

The airplane is a means of transportation and as such must be classed for comparative purposes with other means of transportation. In such a classification it is apparent that the aviation industry is not large as yet. The value of aircraft produced in 1925, the latest date at which comparative data are available, was about 0.2% of the value of all transportation equipment produced.[2] In that year motor vehicles accounted for nearly 60% of the total output of the transportation industries; railroad equipment accounted for about 6%; and the remainder was divided among other types of land-transport vehicles and ships and boats. Although the output of the aviation industry has increased substantially since 1925, it is doubtful if at the present time the total value of aircraft for civilian use is as much as 1% of the total value of all transportation vehicles. In 1929, about 6,000 planes were produced, of which a substantial majority were for civilian use. In January, 1930, probably not more than 10,000 planes were in civilian use in the United States and on routes operated outside of the United States by American transport lines.[3] Perhaps the average retail price of an airplane at the beginning of 1930 was approximately $7,500. An average figure of this kind is of little significance, however, since planes vary in price from a few thousand dollars for the one-, two- and three-passenger, open-cockpit types up to $60,000 or more for transport planes carrying from 14 to perhaps 25 passengers or an equivalent weight in cargo.

So far as the manufacturers of airplane motors are concerned, the immediate market is well defined. The motor manufacturer sells his product to the maker of airplanes. Inasmuch

[2] United States Department of Commerce, *Biennial Census of Manufacturers, 1925*, p. 1,084.

[3] *Aviation*, March 22, 1930, p. 572.

as the life of motors is shorter than the life of planes, some consideration has been given to the proposal that the motor manufacturer sell replacement motors through his own distributing system to users. However, even if this were done, the market for motors would be clearly defined, since a motor is of use only in connection with a plane.

Several factors have combined to dissuade airplane manufacturers from making their own motors. Briefly, these factors are: the relatively large plant and equipment required; the long period of costly experimentation needed to bring each model to a point of satisfactory operation; the large output necessary to assure economical production of motors; the fact that a few engine manufacturers already had attained eminence when the period of substantial civil demand began; and the consequent ready supply of motors suited to all types of airplanes.

Airplane motors are able to maintain their identity in the minds of airplane purchasers even after assembly into the finished planes. Many airplane manufacturers allow buyers to specify the particular make of motor to be put in a plane. These factors of separate identity and optional selection by the buyer combine to make it possible for motor manufacturers to exert far more influence on ultimate users than is usually true in the case of producers of fabricating parts. Although it is by no means certain that this disjunction of plane and motor in the mind of the buyer will continue permanently, it seems likely to do so in the near future at least. Until an important degree of unification of plane and motor takes place, manufacturers of motors can be expected to adopt strong marketing policies aimed at establishing the several makes of motors firmly in the minds of ultimate purchasers as well as of the industry itself.

The potential market for civilian airplanes themselves is more difficult of definition. It is possible, however, to divide actual and potential purchasers of planes into two main classes: those who buy for their own use, and those who buy in order to be able to sell airplane services. These two classes in turn can be subdivided as follows:

A. Purchasers who sell airplane services:
   1. Transport lines
   2. Flying school, taxi service, *etc.*
   3. Commercial photographers, crop-dusting firms, *etc.*

B. Purchasers for own use:
   1. Pleasure and sport
      (a) Individuals
      (b) Flying clubs
   2. Business use
      (a) Executive and personnel transportation
      (b) Sales promotion and advertising
      (c) Carriage of goods

The classification of the potential market is a basic step in the formulation of sound sales plans, and the general lack of a clear-cut recognition of significant market divisions probably has been one of the chief causes of sales ineffectiveness in the aviation industry. It is obvious that the advertising and sales procedure that would prove effective with one of the market divisions indicated above would not prove satisfactory with another of the divisions; the appeals, for example, that would move a young man buying a plane to be used for his own pleasure would probably not move the company officials who were considering the purchase of a plane for transporting sales personnel.

In line with the two main market divisions indicated above, it is important

to recognize that the general public can be divided into two groups: those who are potential purchasers of planes; and those who, while not potential purchasers of planes, are potential users of plane services. The airplane manufacturers' market among persons selling plane services depends, it thus will be seen, upon the demand aroused among potential users of the services.

The Expansibility of the Market

In discussing the expansibility of the market, it is essential to keep in mind the classification of potential customers as previously described. The question is which, if any, of the divisions of the market is capable of expansion, and how much. It is of the utmost importance to the industry to arrive at a sound answer to this question. Production schedules for the various types and sizes of planes and motors, price levels, sales organizations, distribution systems, advertising programs, all depend for proper determination upon the answer.

It has been argued that the airplane can create an entirely new demand for transportation; that mere ability to leave the ground and travel through the air has an appeal entirely aside from the desire to go somewhere and that, as a result, large numbers of persons will fly merely for the sake of flying. So far, no systematic effort appears to have been made to verify or disprove this hypothesis, although the subject is one of importance to plane manufacturers and distributors, particularly in the determination of effective sales appeals. On the other hand, it has been argued that the airplane must depend for patronage upon diverting demand from other forms of transportation. This view seems more tenable; though, like the other, it cannot be accepted offhand. However, the expansibility of the market for airplanes in any event depends in large measure upon the ability of aircraft to supersede the passenger and freight train, the automobile and motor truck, the ship and the small boat.

In short, if the airplane is to grow substantially in use it must be able to demonstrate definite superiorities over other modes of transportation. This calls for an open-minded consideration, on the part of those who are interested in determining the probable expansibility of the market, of the relative advantages and disadvantages of aircraft, both from the point of view of present and expected future performance and from the point of view of consumer attitude. The airplane of today is relatively expensive to own or to use; the costs of learning to fly are high; airports and flying fields are, in most instances, not convenient of access; the schedules of transport lines often are suited to the convenience of the operator rather than to that of the patron and, even so, are not always regularly maintained; and the risk to life seems relatively high. There apparently is, furthermore, a widespread feeling on the part of consumers that the airplane, while an excellent mode of transportation, is for the use of the "other fellow." Many of these disadvantages no doubt can be overcome or minimized, but the industry cannot afford to permit sales optimism to lead it to overlook their existence.

Within the industry there seems to be a sharp division of opinion as to whether the chief future demand for planes is to come from persons selling plane services, persons buying for pleasure or sport, or persons buying planes for business use. This again is a question which cannot be answered offhand, but

which is of tremendous importance to the industry.

Effect of Price on Demand

The effect of price on the marketability of airplanes and airplane services is another question of importance to the industry. Although it is impossible to know what the volume of sales would be at various price levels, it can safely be said that the solution to market expansion does not lie in drastic price reduction. It is true that transport lines were able to increase traffic substantially by fare decreases, and it also is no doubt true that the high price of airplanes restrains some people from purchasing them. The industry consequently will be benefited by whatever price reductions can be made consistently with sound production and sales policies and fair profits to manufacturers, distributors and operators.

In view, however, of the inherent obstacles to air travel, it is obvious that price reductions can have but a limited effect on the market. Take, for example, the potential market among individuals who might buy planes for their personal use. If flight attracts some people because it is a new medium of travel, it likewise for the same reason repels others. To persons who never have flown, the air appears somewhat like the ocean to the person who for the first time contemplates trying to swim; probably the air seems even more formidable, because less tangible. There is many a person who would not undertake to learn to fly an airplane even if one were given to him free. Among the positive causes of refusal to purchase or use an airplane, fear of accident must be given primary importance and should be made the subject of thorough, candid study by all firms engaged in the promotion of aircraft use. How to appraise the risks in the light of observed facts, how to reduce these risks, and how to impart to prospective customers a fair, impartial statement of the risks of flight, are questions to which adequate answers are necessary.

Even aside from considerations of strangeness and fear, there are many factors that tend to discourage the individual from flying and that cause mere price reductions to have little significance to him. Learning to fly, for instance, not only is expensive but calls for certain inherent qualifications. Good general health, accurate senses of sight and touch, together with ability to gauge distances, to keep a sense of balance, and to use good judgment coolly, are necessary assets of the competent pilot. While securing a Federal or state pilot's license is not a prerequisite to the purchase of an airplane, a course of instruction is necessary and possession of a Federal license, highly desirable in any case, is required for interstate flight.[4]

[4] *LICENSES*

STUDENT PILOT'S LICENSE: Issued to any one who satisfactorily passes the physical examination prescribed by the Department of Commerce.

PRIVATE PILOT'S LICENSE: Issued to any one who has flown ten hours solo, and who has satisfactorily complied with the three general requirements of the Department of Commerce outlined above. This license does not allow the piloting of any plane for hire or reward. The minimum age required is sixteen years.

Tuition.....$600

INDUSTRIAL PILOT'S LICENSE: Issued to a pilot who has flown fifty hours solo and satisfactorily complied with the three general requirements outlined above. This license allows the pilot to carry merchandise on interstate communication, but there is no permission to carry passengers.

[Tuition not reported.]

LIMITED COMMERCIAL LICENSE: This license, which has the same requirements as the Industrial License, permits a pilot to carry passengers on short hops around his own airdrome. It does not permit interstate flying.

Tuition.....$1,300

TRANSPORT PILOT'S LICENSE: Issued to a pilot who has flown at least 200 hours solo, and who

In addition to the problem of learning to fly, the prospective purchaser has to decide where he would keep the machine, where he would be likely to fly with it, and how often he could use it. He finds that it is customary for owners to keep planes at established airports or flying fields, where storage space may be rented in a hangar for a charge averaging perhaps $35 per month. This charge includes the service of moving the plane into and out of the hangar. As to where he will fly in his plane, the prospective buyer finds that while emergency landings are sometimes made at non-prepared fields, these landings are attended by a number of risks, such as roughness of terrain, presence of electric wires, trees, buildings, and so on.

It is almost essential, therefore, in planning trips, that the plane buyer decide to make his objective some other landing field about which information is available currently. This limitation on terminating the trip robs the plane of much of the advantage of speed and freedom from traffic congestion. For the flyer usually finds that the landing field is not conveniently located for either social or business calls, and that, on the contrary, it is necessary to use either taxicab or street-car to reach the desired point. For short trips, consequently, the airplane turns out not to afford any marked advantages in the average case; for long trips, the owner must familiarize himself with the peculiarities not only of the objective landing field, but also, as a precautionary measure, with the location and nature of the emergency fields along the route. Finally, in connection with frequency of use, the airplane prospect is likely to remember that night flying at present calls for a high order of skill, that rain, fog, snow, and clouds are limiting factors, and that the occasions for taking trips long enough to warrant the use of the plane are perhaps of sporadic occurrence.

So far as other means of travel are concerned, it is uncertain whether the airplane's cost of operation, including interest and depreciation, can be reduced to a directly competitive point. An automobile, for instance, can carry five persons satisfactorily with a power plant having a minimum of roughly 10 horse-power per passenger. An airplane of similar capacity, however, requires a minimum of about 60 horse-power per person for dependable performance. At the present stage of mechanical development, therefore, the airplane has a severe initial handicap, in terms of energy and consequently of energy costs, to overcome by its great superiority in speed.

These considerations are mentioned, not as conclusive reasons against the purchase of an airplane, nor even as reasons which with the further development of the industry may not lose most of their force; they are mentioned to substantiate the belief that price changes are not likely in themselves to prove effective in stimulating demand. Active and intelligent selling programs designed to offset the factors, other than price, which obstruct the growth of

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has complied with the three general requirements outlined above. This license may be secured by any physically fit war pilot who has flown the requisite number of hours, provided that at least five hours' solo flying has been done in sixty days preceding the date of application for a license.

Tuition.....$4,500

The Industrial, Limited Commercial, and Transport Licenses are limited to citizens of the United States, to aliens who have received their first naturalization papers, or to citizens of any country with which the United States has reciprocal aeronautical relations. The minimum age requirement for all three licenses is eighteen years.—(Adapted by permission from announcements of the Curtiss-Wright Flying Service.)

demand are to be preferred to price emphasis. Unwise price reduction would serve merely to deprive the industry of income needed for developmental work in market expansion.

It seems to be evident that a reasonably correct answer to the question of market expansibility must await thorough research. Whether the necessary research should be performed by manufacturers or by distributors or by the industry as a whole is an open question; there is little doubt, however, that manufacturers typically have had too little first-hand knowledge of ultimate markets and have placed too much emphasis on selling to distributors. Irrespective of who should prosecute the market study, it is desirable that provision should be made for having trained observers invite numerous potential buyers in each of the market subdivisions to take airplane rides. Arrangements should be made for each prospect who accepts the invitation to ride, not once but several times, and the observers should record carefully the reactions of each prospect after his flights. In this way alone can the industry gain a knowledge of the attitude of nonflyers and first-flyers. This knowledge would embrace the reasons for and the extent of actual refusal to fly; the nonuser's initial and subsequent reaction to flight, as well as the reaction of his friends and family; and his final opinion of the desirability of airplane flight. The need for using skilful observers is obvious; even for competent observers working on adequate hypotheses the difficulties of securing reliable data would be great.

If the research is to be significant, it will be necessary to keep well in mind the various classes of potential customers and to differentiate between the various strata of potential demand. Of the various hypotheses which might be tested, the following are examples applying to individuals economically able to purchase airplanes. Individuals in this group would purchase airplanes:

1. If original cost were lowered substantially;
2. If safety of flight were demonstrated;
3. If ease of flight were demonstrated conclusively;
4. If convenience of airplane use were demonstrated to be greater than that of automobiles or other vehicles.

This list of hypotheses is patently incomplete; without complete lists of pertinent hypotheses for each of the market divisions to be studied, the results of any investigation would be haphazard and misleading.

Channels of Distribution

Quite obviously, the selection of correct distribution channels depends upon which divisions of the potential market are capable of expansion. However, in the absence of the needed research data, certain observations may be made.

There are reasons to believe that the typical channels used for airplane distribution, which have been modeled so closely upon those established in the automobile industry, are not fully suitable. Evidences of dissatisfaction with the distributor-dealer system are found in the fact that some airplane manufacturers have considered discontinuing distributors altogether in order to sell directly to retail dealers, while other manufacturers have given much attention to the possibility of selling through automobile distributors and dealers. In general the development of the distributor-dealer system has been haphazard and based upon too little analysis of the financial requirements and mer-

chandising capabilities needed to sell airplanes effectively. The dealers and distributors customarily have been chosen for the primary reason that they already were engaged in some form of flight activity, such as operating flying schools, selling air-taxi and photographic services, or engaged in stunt and exhibition flying. The characteristic procedure of some airplane manufacturers, at least at the beginning of their marketing development, was to appoint numerous such distributors and make them responsible for appointing dealers. The distributors were expected to contract for a minimum number of planes for a year and to deposit with the manufacturer a substantial sum for each plane ordered as an evidence of good faith. With such an agreement a distributor naturally undertook to secure a sufficient number of local dealers to take the planes contracted for off his hands. Thus, the manufacturers have given primary attention to effecting sales to distributors, and the distributors in turn have endeavored to pass their commitments on to dealers. The distributors and dealers both have been chiefly concerned with operations other than the sale of planes and have given scant attention to developing competent sales organizations and sales methods. Throughout the system, the characteristic attitude toward the sales of planes has been one of passivity.

These conditions no doubt were to be expected in view of the fact that the industry had so recently started upon its transition from production-emphasis to marketing-emphasis. But manufacturers no longer can afford to have so little contact with ultimate purchasers of their products; they must find out how airplanes can be sold to final users and they must make sure that the distributors and dealers, if that method of reaching the market is to be continued, understand the characteristics of the demand for airplanes and understand also how to exploit that demand.

If distributors and dealers are to be used, it is important that they be able to make a profit from the sale of planes. Otherwise they cannot be expected to devote much attention to that activity. This means that strict limitations must be placed upon the number of distributors and dealers used. It also means that steps should be taken to determine the operating expenses and profits of distributors and dealers. At present there apparently exists an almost complete lack of knowledge concerning this point. There are no standardized accounting systems in general use among such sales outlets, and their accounts are not kept in a manner designed to supply systematic operating statistics. It may be that airplane manufacturers who sell through distributors and dealers will find it necessary to devise a satisfactory accounting system and induce sales outlets to make use of it. Without specific and classified accounting information on distributors' and dealers' operating results, manufacturers are severely handicapped in formulating distribution policies, setting prices and discounts, and aiding their sales outlets to improve their effectiveness.

It is probable that many more distributors and dealers have been appointed than the present aggregate volume of sales in the industry can support. Manufacturers usually have not attempted to confine their outlets to the sale of their own makes of airplane but have merely sought to prevent the outlets from handling directly competing makes. The numerous mergers which have taken place in the industry

have had some effect in restricting the number of distributors and dealers and possibly will exert an even greater effect in this direction in the future. Nevertheless, since manufacturers have tended to pay most attention to securing a large number of outlets in order to dispose of inventories, it is likely that more outlets have been appointed than can be justified on the basis of probable sales to ultimate users. It is axiomatic that a manufacturer should limit his sales outlets to a number justified by the sales volume. For instance, if a manufacturer producing 500 planes a year has 150 dealers, the average sales of his plane per dealer would be less than 4 a year. If the average selling price of that manufacturer's planes is $5,000 and if the dealers are allowed a 15% discount, the maximum gross margin per plane is $750, and for 4 planes is $3,000. From this maximum the dealer must allow for mark-downs, salary, interest, rent and all other expenses. While this illustration is hypothetical it could be approximated in numerous instances. The conclusion is obvious that, under circumstances in any degree approaching this situation, the dealer has no incentive to subordinate the sale of airplanes to his other activities.

Sales Promotion and Advertising

Aircraft manufacturers, distributors and dealers have a number of problems in common as regards sales-force management, especially in connection with the classification of the market for airplanes. Need a separate force of sales executives and salesmen be organized to reach each of the different types of market? Probably transport lines and fleet operators can best be reached by manufacturing companies; those companies can organize separate departments to care for such sales or can rely upon an unsegregated organization. But when it comes to the markets composed of business firms and of individual buyers respectively, the case for segregation of sales force becomes more apparent. In general, one market must be approached with rational sales arguments and the other with emotional arguments. The salesman who can sell airplanes to individuals for their own use may be unfitted to sell to business firms. Regardless of whether the same or separate sales forces are used, it is essential that the sales organization recognize the differences in the two markets and in the sales appeals that will influence them. A salesman need not, perhaps, be a pilot, but he surely must understand the workings of the planes he is to sell, and especially must he know the reasons why people will purchase his product. Technical knowledge alone, however, does not equip a salesman for the task of inducing people to purchase airplanes.

To formulate a sound advertising program without adequate market data is impossible, and it was to be expected that motor and plane manufacturers and distributors would find it so. Until very recently most advertising of aviation products has appeared in the numerous trade and other journals devoted exclusively to aviation interests and has been selective in appeal. Within the past few months, however, aviation advertising has appeared in more widely circulated periodicals, and much of this advertising has been designed to create a primary demand for flight rather than merely to encourage the selection of a particular make of plane or motor.

Thus far, firms in the aviation industry appear to have relied primarily

upon the appeals of speed and novelty for stimulating demand for flight. While the most effective possible appeals cannot be selected until more is known concerning the attitude of potential customers, it would seem that, if the airplane is to compete successfully with other transport vehicles, more effort should be made to point out the specific advantages of the airplane and to answer the probable objections of consumers.

In general, it seems that far too little actual sampling has been done as a means of sales promotion, as well as a means of market investigation. To give prospective customers a sample trip or a number of trips in an airplane is, of course, a highly expensive means of securing sales. Yet until a person actually has made one or more flights, any advertising or other sales efforts are too likely to seem impersonal and irrelevant to him. An extensive sampling program on the part of airplane manufacturers and their sales outlets offers promise of breaking through the wall of resistance which seems to separate the typical non-flyers from the flyers.

Another problem which may well become of much importance to the industry is that of allowances and trade-in requirements on used airplanes. If marked expansion in the use of airplanes takes place, the used-plane question may become as embarrassing as it has long since been in the automobile industry. The tendency thus far seems to have been for manufacturers of airplanes to leave this problem to be settled almost entirely by the distributors and dealers. The latter are not likely to work out satisfactory policies without some unifying assistance from the manufacturers. A few manufacturers have gone to the extent of acting as clearing houses for the interchange of used-plane information among their sales outlets, but it is highly desirable that manufacturers should go much further and formulate specific policies to be recommended to outlets; otherwise numerous variations and inconsistencies in trade-in practice are inevitable.

Conclusion

The aircraft industry has shown that optimism with reference to its future which tends to characterize the early stages of development of products of unquestioned technical excellence. This optimism, apparently unavoidable and often justified by subsequent events, customarily results, as in the present case, in a lack of attention to marketing problems. It is necessary to realize, however, that technical excellence does not in itself assure the sale of a product. Moreover, the success of the steamboat, the railroad, and the automobile does not guarantee a similar success to the airplane. In short, it is essential that the industry recognize the advantages and disadvantages of its product from a market point of view and mold its sales and advertising plans accordingly. This course of action calls for thorough investigation and diagnosis.

MERGERS IN THE COTTON INDUSTRY

By EDMUND P. LEARNED

IN the January and April, 1930, numbers of the HARVARD BUSINESS REVIEW, J. Wisselink, of Holland, discussed "The Present Condition of the English Cotton Industry" and "The Lancashire Cotton Corporation and its Effect on World Competition." Since these articles were written, much progress has been made by the Lancashire Corporation in the formation of its organization. Combinations have also been effected in the Egyptian section of the English industry. The purpose of this article is to consider how far the developments in England throw light on the situation in the United States, and to determine to what extent mergers in the cotton industry are desirable and what type of merger seems most satisfactory.

Progress of the Merger Movement in England

Since its inception, the Lancashire Cotton Corporation has considered for membership over 200 concerns, which represent over half the spindle capacity of the section using American cotton. It has refused to consider 25 companies because they were incapable of rationalization. It has made firm offers to 135 companies; of this number, 20 companies were not interested, while 71 companies with 6,750,000 spindles and 20,000 looms have agreed to join the corporation; negotiations are still in process with some 40 additional companies. Twenty-nine of the 71 companies which accepted offers have already been approved for absorption.[1] An interesting fact about the first 29 companies absorbed is that most of them were what are known in England as recapitalized companies; moreover, most of them had not paid dividends since 1920 or 1921. The Lancashire Cotton Corporation, instead of being a sound panacea as Wisselink argued, is perhaps little more than another banker's combination thrown together in order to enable the bankers to liquidate their questionable holdings. Sir Josiah Stamp contends, on the other hand, that the Lancashire Cotton Corporation is not confusing financial grouping with rationalization, but is making the technical aspects of the plant primary and the financial aspects secondary.[2]

During 1929, the Combined Egyptian Mills, Limited, owning 31 mills of 15 different companies, was formed. This company, with its aggregate capacity of 3,000,000 spindles, is larger than any combination of fine-goods mills in the United States.

The data with respect to either of these combinations are somewhat scanty, but it is obvious that the Lancashire Cotton Corporation thus far is little more than a horizontal combination of spinning mills. A real integrated unit of spinning mills and weaving mills would have nearer 175,000 looms than 20,000, since it would

[1] For statements with reference to activities of the Lancashire Cotton Corporation, see *Textile Recorder*, "The Cotton Industry in 1929," Vol. 45, Jan. 15, 1930; *International Cotton Bulletin*, Vol. 8, #30, Jan., 1930; Barron's *English Cotton Trade Outlook*, Feb. 24, 1930.

[2] Sir Josiah Stamp on "The Present Position of Rationalization" in an address delivered before the British Textile Institute. This address was quoted in the *Manchester Guardian* for Jan. 10, 1930, and in the *Journal of the Textile Institute* for Feb., 1930.

take around 175,000 looms to absorb the production of 7,000,000 spindles.[3] Notwithstanding the lack of sufficient looms today, the Lancashire Corporation may yet become an integrated unit. The whole tradition of England, however, is toward a horizontal organization of the textile industry; it will take the corporation time to break down this tradition. Moreover, it has no doubt proved more difficult to find weaving mills which are capable of real rationalization than it was to locate desirable spinning mills.

But more important than the immediate progress made is the question of the soundness of the theory upon which the Lancashire Cotton Corporation claims to be proceeding. Mr. Wisselink has argued at great length with respect to rationalization and synchronized production, so that little repetition is now required. Nevertheless, it is desirable to state exactly what we mean by rationalization.

Rationalization and Its Meaning

By "rationalization" is meant the employment of such methods of technique or organization as are designed to secure the maximum production with a minimum of waste of either effort or material. It includes the scientific organization of labor, standardization of both materials and products, simplification of processes, and improvements in the system of transportation and marketing. Rationalization means the organization of industry and of each process along the most economic lines. A rationalized plant is one which is an economic unit of production, one in which the methods of production are so organized as to result in the maximum economy, or in other cases, a plant in which large-scale production has been carried to the optimum point. For example, all the economies of specialization could be secured by having one spinning mill spin only certain counts of yarn. Likewise in a weaving shed, all the looms might be run on a particular construction, whereas the looms of another mill could be devoted to a different construction.

The attempt to lower production or marketing costs by the more economic organization of these processes would seem to be a wholly commendable aim; whether the country be England, whose chance of regaining her lost foreign markets lies in the direction of offering lower prices to foreign buyers, or Germany, which must secure all the possible economies of production and sale in order to gain the markets and the sales revenues therefrom with which it may secure the means to make payments on reparations account.

Can rationalization similarly overcome the basic difficulties of the cotton-textile situation in the United States? These difficulties are easily listed. Cotton-mill capacity was greatly expanded during and after the War; the demand of the country has not yet grown to such proportions as to absorb the capacity production; production schedules have not been governed by sales actually made; and marketing methods have been so antiquated that many mills have been unable to cope with new merchandising conditions. Consequently the mill which has wanted to secure business has done so by reducing prices in order to attract patronage from some other mill. Then the mill has tried to get its costs down and to keep them down by running the mill at as near capacity as possible. Under such conditions the lowest-cost mills

[3] Mr. Wisselink's research points to this conclusion, and the experience of American mills with the rough ratio of 40 spindles to 1 loom confirms it.

have been able to make a profit while a large share of the industry has been incurring losses or merely breaking even. The industry as a whole has remained in a state of chronic depression.

Some theorists in economics argue that only when the high-cost mills fail and go out of existence can long-run forces exert their effects and the industry become more profitable for the remaining firms. The answer of the practical man to this assertion is that the survival of the fittest is a long-drawn-out process. There is, moreover, no assurance that the fittest, that is, the low-cost producers, will necessarily survive the economic process. The high-cost mills may be better financed and thus may be able to stand a long period of unprofitable prices. The theory of the promoters of the Lancashire Cotton Corporation is that, by organizing companies along so-called rational lines, this competitive process of the elimination of the economically unfit will be speeded up, softened, and perhaps the worst effects of the process mitigated.

The argument of Sir Josiah Stamp before the British Textile Institute presents the case for rationalization succinctly.[4] He said that pure individualism, particularly on a small scale, found a way out of its difficulties by the elimination of the economically unfit. Though ultimately these less-fit units had to succumb, in their dying struggles they enfeebled the fit and reduced the whole industry to a precarious condition. True rationalization did not seek to defeat or defer economic consequences, but, having ascertained the inevitable, sought to bring it about more quickly by definite action.

[4] *Op. cit. supra.*

The same line of thought has had one of its most outspoken adherents in the United States in Walker D. Hines, former president and now chairman of the Cotton Textile Institute. A brief résumé from his pamphlet on *The Survival of the Fittest* will suffice to show his argument:

> This talk about the survival of the fittest seems to assume that the mills should not join in an exchange of information as to production, stocks, costs, *etc.*, should not encourage each other to try to balance their production with demand, and should not encourage meeting together in groups to discuss their common problems and thereby acquire a better acquaintance with each other and a better knowledge of what others are doing . . .
>
> It, therefore, seems to be a necessary part of this theory that each mill should be left to its own devices and that as a result the weak and badly managed mills will fail and disappear from the field, which will then be left in control of the strong and well-managed mills.
>
> Apparently there underlies this theory the assumption that somewhat later we shall see a situation where a comparatively small number of mills, all employing sound manufacturing and merchandising policies, will constitute the industry and that it will no longer be subject to the demoralization which comes from an enormous number of mills of widely varying degrees of strength and ability of management . . .
>
> The assumption that the weak mills will fail and disappear loses sight of the fact that the spindles and looms will not disappear. Even if there should be repeated failure of weaker mills, the result would be their reorganization and continued operation and probably under no more experienced and capable managements than was true before the mills in question had failed. Further than that, they would probably be reorganized with lower capitalization and therefore would be able to go still further in the direction of influencing merchandising policies up to the time they fail again.[5]

[5] Walker D. Hines, *The Survival of the Fittest*, Cotton Textile Institute, pp. 2 and 3.

This line of argument naturally leads Mr. Hines to the conclusion that there is no substitute for some form of cooperative endeavor. The question may be raised as to whether cooperative endeavor is a real substitute for the type of rationalization proposed by the Lancashire Cotton Corporation.

Cooperative Control of Production

The cooperative endeavor which first appeals to the minds of many business men is an arrangement to fix prices. This method has the obvious practical difficulty that it is illegal in this country and that any contract entered into with such purpose in view is unenforceable at law. To make such an agreement effective, even if legal difficulties were avoided, it would be practically necessary to limit production among members, and that is a difficult measure to accomplish in any situation where there are many producers. Moreover, if mills were to agree to a definite price scale, it is almost certain that members would not keep to the terms of the agreement. This fact has aided the common law appreciably in curbing monopolies: some members probably would seek to secure trade by secret concessions. There would be, furthermore, the added difficulty of determining the level at which the price should be fixed. Should it be high enough to cover the costs of the high-cost producers? This method is fraught with so many difficulties that it has little to commend it.

Though price agreements and quota policies are impracticable, it does not follow that cooperative effort has no field left. There is still the problem of regulating production schedules in accord with demand.

The market for cotton goods is traditionally weak largely because stocks accumulate; a buyer's market is the common thing. The market has been weak and will continue to be weak just so long as mills continue to run their plants at full capacity, with the idea of getting the lowest possible costs in this manner. This policy causes large stocks to be built up, stocks about which buyers oftentimes know more than sellers. Buyers cannot be expected to bid high prices for merchandise when they know that a two- to three-months' supply is readily available. When surplus stocks are accumulated, the sellers have to accept what the buyer will pay. Under these conditions the mills have no real price resistance. If surplus stocks were not accumulated, it is likely that the buyer's position would not be so strong. It does not follow that the level of prices could then be raised to highly profitable levels, but it would be easier under such circumstances for mills to refuse to accept definitely unprofitable offers, which they now accept in order to dispose of surplus stocks.

In order that sellers shall know as much about stocks as shrewd buyers know, the collection of statistics with respect to sales and stocks is desirable. The mere collection of data, however, is no panacea. If the data are not used by the mills in the formulation of policies, others—especially buyers—will use the statistics for their own purpose and against the interests of the mills themselves. But to wait until stocks have become excessive before taking action seems to be an unwise policy. The common policy of leaders in the industry of talking curtailment when excessive stocks have accumulated is not and cannot be a real cure for the fundamental difficulty. What the industry needs is a policy of inventory control.

Many of the well-managed industries of the country schedule production in accord with sales. There is no inherent reason why a particular textile mill when its stock begins to increase should not curtail its own production at once. The advantages of controlling production in accordance with sales are patent. There is a reduction in style risk, as well as a reduction in the risk from a fluctuating price level. The psychological effect of large inventories on both buyer and seller has been indicated. There are, too, the savings in capital requirements and interest charges. All these points have been developed in some detail in the issue of the *Textile World* for March 1, 1930.

A policy of curtailment of production after stocks have become excessive, rather than current control of production, penalizes the well-managed mills which try to control production in accord with their own sales. Such mills may be asked by other mills to consider a joint curtailment which means, of course, that the first group is asked to stay out of the market and out of production in order to give the members of the second group the opportunity to dispose of their surplus stocks. This policy in the last analysis does not curb the activities of those mills which create excess stocks by producing more than their current sales require; in fact, the policy places a premium on such management and could hardly be expected to be a permanent policy. It is true, of course, that it might pay a well-managed mill to stay out of the market in order that prices might not be forced still lower; yet even these mills are likely to balk at giving the advantage to others.

To some it would seem that social pressure would cause the badly managed mills to change their ways. Each mill, of course, claims that it is the one that is well managed and produces only what it can sell. The other fellow is always the one to blame. Facts are facts, however, and the offending mills could be spotted and named if complete inventory figures for each mill were currently available. In Japan, where the family spirit and loyalty to state aims are stronger than in this country and where four organizations control 60% of the spindle capacity, more figures are currently collected than have ever been planned for in this country; moreover, these figures are used. But here, where the individualistic spirit is strong among cotton-mill executives, it is unlikely that strictly cooperative efforts in the use of statistics will produce real results. There are too many policies of management represented in a group of 40 to 100 mills to expect to get real agreement on any policy. For this reason the present writer is doubtful with respect to the possibilities of purely cooperative endeavors to control production, especially when there is a large number of competing mills in the picture whose individual policies might not seem harmful, but whose collective individual policies cause what appears to be permanent chaos. Among a smaller number of firms representing a larger proportion of a particular branch of the cotton industry, any one firm would be more likely to recognize the harmful effects of its policy on the industry as a whole.

If cooperative control of production by many small mills is not the ultimate way out of the present situation in this country, there remain two questions: whether mergers can help the situation, and, if so, whether a horizontal merger or a vertical merger is more desirable.

Horizontal Mergers

The history of the cotton industry in the United States does not present a strong case for horizontal combinations in the cotton industry. The Consolidated Cotton Duck Company, a horizontal organization which had control over 20 mills and 2 selling houses in the sail-duck trade, was never considered a success. Nor was the New England Cotton Yarn Company ever noted for its substantial profits secured from merging a group of New England yarn mills.[6] And yet there are now current many news reports which refer to a union of fine grey-goods mills into a horizontal combination, while a second fine-goods organization is reported to be about ready to launch, and a third is rumored to be under way.

A pertinent question is—What gains may be expected to accrue from these horizontal mergers?

The stock argument of merger advocates is that there will be economies in selling and in production. Since among grey-goods mills the costs of selling are low, any saving made through merger would not be large and would amount to only a small percentage of the selling price. Moreover, the savings in selling expense frequently are required to cover the added overhead which the larger organization has to carry.

There are, however, real possibilities of savings in production costs as a result of the concentration of the manufacture of particular constructions in one mill rather than in several. Before merging, a mill may be producing some of each count of yarn and some cloth of each construction. No one of these mills has been able usually to carry production methods to the maximum economy. By concentrating production of particular constructions, it has been conservatively estimated that a group of mills may save from 5% to 15% of the manufacturing cost. This specialization by mills is an aspect of the European doctrine of rationalization which might be applied in this country. It is a possible result of mergers which means a real economic saving.

But there are limitations to this proposal. Customers have preferences for the fabric from Mill A and do not want a fabric of the same construction delivered from Mill B. The New England Cotton Yarn Company encountered this difficulty years ago and the same difficulty exists today. Unless a company has a monopoly, it can ill afford to sacrifice the goodwill of a particular mill in order to secure a cost economy for the group. Under ordinary conditions the converter may turn to a competing mill rather than accept what he considers a substitute. Even with a monopoly, high-handed methods are hardly good business policy. At best, then, one should guard against overoptimism with respect to immediate savings in production costs. On the other hand, there is a good possibility of educating customers to the standards of the consolidated group. Furthermore, in many cases more prompt deliveries may be made by one grey-goods mill to the finishing plant designated by the converter than by other mills of the group. This promptness of deliveries is a factor in breaking down resistance of customers to the acceptance of merchandise from a different mill. Past experience indicates, however, that if shifts of this sort can be made at all, they must be made gradually.

Another minor factor which will delay the full benefits of a merger is that

[6] For a detailed discussion of the history of these consolidations, see Copeland, M. T., *The Cotton Manufacturing Industry of the United States*, Chapter X, "Associations and Combinations."

laborers may object to the transfer of cloth constructions from one mill to another. This objection arises because of the piece rates for weaving. A smaller production per day is secured on the hard weaves, in contrast to the easy weaves, with the result that a laborer who is placed exclusively on hard weaves cannot make a living wage under existing rates. Where this condition exists, mill executives find it necessary to defer the adoption of a full program of rationalization. A vicious circle is present in a situation of this sort. It would appear that the mill could adjust the piece rates upward on the hard weaves in order to make it profitable for the laborer to specialize upon them, but the fact is that with market prices what they are, mill executives feel that they cannot pay more than they are now paying for the weaving of these constructions. They choose, therefore, to let a given weaver run some looms on the slower, harder weaves and some looms on the easier faster-weaving cloths. Thus, the laborer gets a living wage and the mill keeps down its cost on the hard weaves, although it does not secure the maximum economy on either construction.

The conclusion of the whole matter then is that horizontal combinations may in time by a process of rationalization secure some economies in production, but that these economies will be secured gradually and not immediately.

It is well to bear in mind that as this rationalization of production takes place, the capacity of a given plant is in fact increased. That in itself creates a nice problem regarding the disposition of the product.

The possibility of larger stocks, if these rationalized plants are run near capacity, is immediately evident. Unless demand is increased, the rationalized mills will have to operate at a smaller percentage of capacity than before or stocks will become excessive. Still, the danger of excessive inventories would seem to be more easily controllable by a large organization than by many small ones, because the effects of the policies of large organizations are more readily traced than those of small firms. Social responsibility for business practices would be more definitely fixed, and, consequently, sounder policies might reasonably be expected.

Another possible advantage of horizontal mergers which unite high-cost and low-cost mills is through the reassignment of products among the mills with the result that the high-cost mills produce the fabrics assigned to them more cheaply. From the point of view of the high-cost mills there is the added point that the price competition of the low-cost mills may be eliminated. The ability to control the market is an advantage of major importance, but it is believed that any mergers thus far proposed are rather limited in the power to control the market except perhaps in a few fabrics. A more important limitation than that of the size of proposed mergers, however, is that of potential competition. This point is well illustrated by the following quotation from a southern mill executive:

> A strong group effects a merger. In order to increase their earnings, some of the less efficient plants are shut down, the production of various fabrics is allocated to the mills best equipped to make them, and output is limited to only such amount of cloth as the market will absorb. Presto! The merger is a success. The price goes up. The industry is on a paying basis again.
>
> Then what happens? A hundred little independent mills, either previously shut down, or still struggling along in the general morass, immediately seek to take advantage of this new prosperity and start up their old machines, or put part of their

looms and spindles on the fabric for which Merger and Company has made a profitable market. Soon supply overtakes demand and the industry is once again where it was at the outset . . .

And so, even if a merger of cotton mills were effected, so long as there remained outside the merger any substantial number of small units or any potential number of new units that could start up and intrude upon the favorable market created by the combination, you would always be faced with the danger of overproduction and, before long, everybody might be sinking again in the same old overcrowded boat.[7]

To this line of thought may be added the point that even if the merger contained a large proportion of the mills and if it were able to control production and raise prices, there still remains the more fundamental difficulty that substantially higher prices for many cotton-textile products would encourage the use of substitutes. For this reason it is probable that real monopoly power will not and could not be exerted in this country for any length of time in this industry.

There is another way, however, in which prices may be made to advance or by which demand may be increased. That is through sales promotion of the product and by better marketing organization. Proponents of horizontal mergers even of grey-goods mills argue that the marketing position of such combinations will be improved. Before a final appraisal of this argument is made, it will be necessary to deviate from our main line of thought to consider the market position of the various branches of the textile industry. After that, an appraisal of the market position of a horizontal merger may be made.

[7] From an address of Bernard M. Cone of the Proximity Cotton Mills on "Some Present Day Problems of the Textile Industry," before the School of Commerce of the University of North Carolina.

Market Position of Branches of the Industry

Since the success of any industry depends upon the sale of its products to ultimate users at prices high enough to allow each step in the marketing and production process a profit, a study of the market position of the various branches of the textile industry should begin with the points of user contact. By restricting this analysis to consumer goods (though it applies in principle to industrial goods as well), one may designate the various branches of the industry as the retail outlets, the wholesaler where he is still a factor, the converter, the finisher, the grey-goods mills, and the spinning mills where they exist separately.

The retailer is admittedly in the strongest bargaining position. He is closest to the consumer, his sales vary less from season to season than do those of any factors behind him, and he is able to protect his profit margin by refusing to buy unless the price is low enough to allow him the usual rate of mark-up in the retail trade. The converter or the manufacturer may refuse to accept a retailer's offer for merchandise on the ground that the price offered is too low, but if the goods are already made, the retailer has the whip-hand and the seller will eventually have to let the merchandise go. Many mills and converters as well have already learned that they have to meet rather rigid bid prices from retailers and that they must, therefore, offer merchandise at a price which will allow the retailer his mark-up if he sells at standard prices. The manufacturer's only salvation in this case is to produce merchandise to sell at those prices. The converter or the integrated company might protect its retail position by

operating retail stores, but this plan is so obviously impracticable for many lines of textile products that it will be given no further consideration.

The cotton manufacturer might as well make up his mind to the fact that the retailer is in a dominant position and is able to protect his profit. Before leaving the retailer, however, it is wise to direct the manufacturer's attention to the reasons why retail stores are successful. When the retailer gives his customers what they want in the quantities, qualities, and assortments in which they want it, he ordinarily makes a profit. The successful retailer keeps his eye constantly on his public and its probable desires; he acts as its agent in purchasing and not as the sales agent of the manufacturer. This basic principle of merchandising is one which mill men might well heed in planning their product developments.

Where the wholesaler renders an essential service efficiently, he too is able to cover his costs and make a profit out of the original retail price before the converter or manufacturer secures a share. The next step back is either the cutter or the converter. General statements with respect to cutters are dangerous, for this trade is not very stable. Well-managed firms in this trade will arrive at their bid prices for cloth by deducting from their somewhat standardized selling prices their costs of production and selling with an allowance for profit. What is left, the converter or integrated mill gets for the cloth.

The converter is as near to the grey-goods mill as he is to the consumer and his strategic position is less strong than that of the retailer. On the other hand, his position is much stronger than that of the grey-goods mill. Furthermore, it is the converter or his equivalent in the integrated organization who performs the basic merchandising function. He determines how the grey goods shall be finished, and in what patterns and colors they shall be printed or dyed. It is he who gives the staple grey goods individuality and finished form. The converter or corporation printer who follows the merchandising principle aptly displayed by retailers, of determining what the customers want and of making that in the most attractive designs and patterns, receives the custom of buyers. A good merchandiser among converters may not secure higher prices than his competitors, because he is dealing, as they are, with standardized prices of cutters and retailers; but he will get a larger volume of business and it is quantity on which he makes a profit.

Lastly, there is the grey-goods mill which turns out a fabricating material and not a finished good. Its product is practically a standardized staple which can be purchased on specification. The grey-goods mill has no chance to individualize its product and attach a brand name which will carry through to the consumer. Except for quality differences between mills, price is the major factor in sale. The use of brokers in the sale of grey goods tends, moreover, to keep price a major factor, since the broker sells on commission; a fraction off the original price does not reduce his commission materially though it does make the difference between profit and loss for the mill. On account of these weaknesses in the market position of the grey-goods mills, the present writer believes that the horizontal grey-goods combination is inherently weak, whereas the integrated combination is inherently strong on this point. A horizontal grey-goods combination might be able to support

a research department which would work closely with customers to determine the new additions in fabric constructions or the items to discontinue, and this step would undoubtedly help the situation. But the final finished fabric is judged more by the type of finish applied, the dyes used, and the patterns printed than by the weave used. The result is that, without the converting function of the textile industry included within the combination, the organization has no assurance that its grey cloth will be regularly used.

There are numerous difficulties encountered in the formation of horizontal mergers along rational lines, such as the terms under which various mills will be taken in. These are intricate and difficult problems, but they are excluded from this discussion in order to allow consideration of vertical mergers and their place in the textile industry.

Vertical Mergers

A vertical merger in this country would certainly include the converting or merchandising function of the trade and might eventually include some of the cutter's functions. Whether a vertical merger necessarily includes the finishing branch of the industry is somewhat of a moot question among textile-mill operators. There are those who contend that finishing, and especially the printing branch, is such a fine art that it is better performed by a specialist outside of a vertical combination. There are others who argue that a finishing plant adds more overhead than is desirable and does not leave the organization flexible. Nevertheless, the following analysis convinces the writer that an integrated unit should include finishing units as well as other production processes. This conclusion is based on the position of the integrated unit with respect to merchandising responsibility for the product and also on the question of flexibility in manufacturing.

The integrated unit is able to assume full responsibility for its merchandise. It can guarantee the quality of its basic cloth constructions, it can also control the quality of production in its finishing and printing plants. In this day of branded merchandise, the company which can assume full responsibility for the quality of its final product, and which can maintain the quality of that product, is in a preferred position over the company whose product may be of variable standards. The former type of company can adopt a thoroughly coordinated merchandise program with the assurance that it will be properly developed in the production phases. The independent converter, on the other hand, buys his grey cloth from a mill over which he has absolutely no control. Also, he has his cloth finished in a plant over which he has no control. And though it is to the advantage of the cloth mill and the finisher to hold the patronage of this converter by maintaining quality standards, this is not always done. The mill and the finisher being hard pressed to show profits will sometimes scrimp quality of materials and workmanship, with the result that the final product is not exactly what the merchandise program of the converter demanded. Thus there is division of responsibility for the final product in the non-integrated organization. Moreover, the attempts of mills and finishers to cheat the converter by scrimping materials and workmanship, and, in doing so, to quote lower prices as a means of getting the converter's patronage, introduce an insidious type of competition of which the industry might well be rid.

The point on flexibility brings up the problem of theory with respect to plant capacity at various stages in the integrated unit. On one hand, there is the theory that Wisselink suggests, of a harmonized production plan in which one stage of the process fits neatly into the next. On the other hand, there is the theory that the capacity of the production equipment and plant at one stage should be less than sufficient to take care of the normal requirements of the preceding stage. For example, weaving capacity should be less than the quantity of goods that the converting branch will sell. If a finishing plant were owned, it should have a capacity for less merchandise than the converting branch can sell, and spinning capacity should be less than loom requirements. Thus, it would be possible for the plants of the integrated units to be low-cost producers, since they could run practically all the time and could specialize on the items for which they were best equipped, and the company could go into the open market to buy additional yarn, grey cloth, or job finishing, as the case might require.

One test of the relative merits of these two theories may be made by inquiring what the effect on the industry would be if there were only integrated units in operation and if these companies were planned, first, on the basis of one theory and then, for comparison, on the basis of the other theory.

An examination of the consequences of the second theory, of being dependent on outside capacity to care for peak requirements, brings out some interesting points. The proponents of this plan of organization argue that they would secure low costs within their own plants. This contention may as well be admitted. In a period when there is surplus producing capacity available in almost every branch, the integrated organizations might secure their outside requirements quite cheaply because of the competition of the outside mills for what little business there was. After failure and junking of these outside unprofitable units had taken place, if integrated companies still desired outside reserves, they would have to pay the remaining outside producers enough when they worked to cover their overhead when they did not work. In other words, the industry must cover in normal times its overhead on all the capacity required for its peak loads. In boom times it will more than earn its overhead, and this over-absorbed burden of good times should be available to cover the under-absorbed burden of poor times. This method of costing has not been customary in the industry; if it had been, many mills would probably have remained a dream rather than have become an actuality. If this line of argument is sound, there would appear to be little difference, from the point of view of sound business policy, whether an integrated organization were set up under one theory or the other.

On the grounds of flexibility of operations, it has been argued, however, that it is better to have some required capacity outside the integrated organization. Two aspects of this argument will be mentioned here. The first is that the balanced plant of today will not be the balanced plant needed five or ten years hence, since style changes make obsolete or unnecessary large blocks of equipment. The outside independent organization would be expected to adjust itself to this quick change while allowing the integrated organization to wear out more of its machinery. This argument has little force, since when the integrated unit

buys from the outsider it should have to pay prices high enough to cover the cost of junked machinery. Certainly, it would be unsafe for an integrated unit always to follow outsiders in adopting improvements. An integrated organization should use heavy enough schedules of depreciation before net earnings to provide for replacement of obsolete machinery. The prosperous branches of the industry should make adequate depreciation provisions now; it is a pity, but it is true, that there are some branches in which little short of a complete write-off of equipment will do any good.

The other point, on flexibility of operations, is that the large-sized unit which seems practical from a rational point of view is not flexible in meeting rapid style changes; therefore, a small plant as a production unit for style goods is more flexible than a large one. With respect to mill flexibility, the experience of one organization indicates that a mill with, say, 8,000 loom capacity is actually more flexible than one with 2,000 looms. For if a new weave proves popular, the large mill can assign a larger number of looms at once to the new fabric. With an average production period of 10 weeks for a particular type of fabric, and with a tenth of the looms becoming available each week, the large mill can shift a maximum of 800 looms to the new product, whereas the smaller mill can shift only 200 looms.

Conclusion

In summary the integrated organization appears to be in a stronger position than the horizontal merger because it has control over the product longer and has a better market position. The question of how large an integrated organization should be, remains unanswered in detail in this discussion, though the basic thought may be indicated that an economic unit or units of production at each stage in the process should be included.

It seems certain that mergers, whether horizontal or vertical, provided they are not bankers' schemes for selling securities and that mills are not taken in at inflated figures—and what figure is fair is a real problem—are more desirable than a continuation of present chaotic conditions. But it seems that horizontal mergers are merely temporary measures and do not represent an ultimate solution. The major problems of the industry are: how to promote the sale of its products, how to develop new uses for its merchandise, how better to stimulate the latent demand for cotton textiles and how to create a more salable product through improved merchandising and coordinated control of production. If the industry turned its attention to these problems and also adopted more of the customer point of view with respect to its merchandising problems, quite probably demand would be expanded and the industry would approach more profitable levels. Certainly this attack on the problems of the industry is more fundamental than the futile attempts to solve the problem by more tariff protection, or by continuing chief emphasis on production problems and costs.

There are but two qualifications to make about the desirability of mergers in the cotton industry. An integrated merger will not be beneficial unless its management has a well-conceived merchandising plan. Moreover, the integrated companies must devise superior methods for control of production and inventories.

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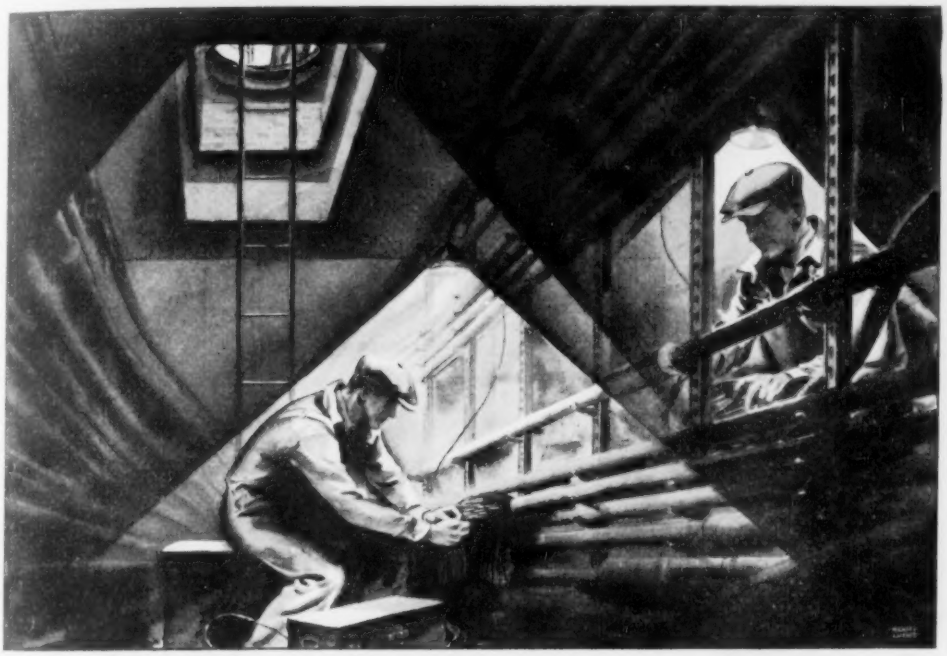

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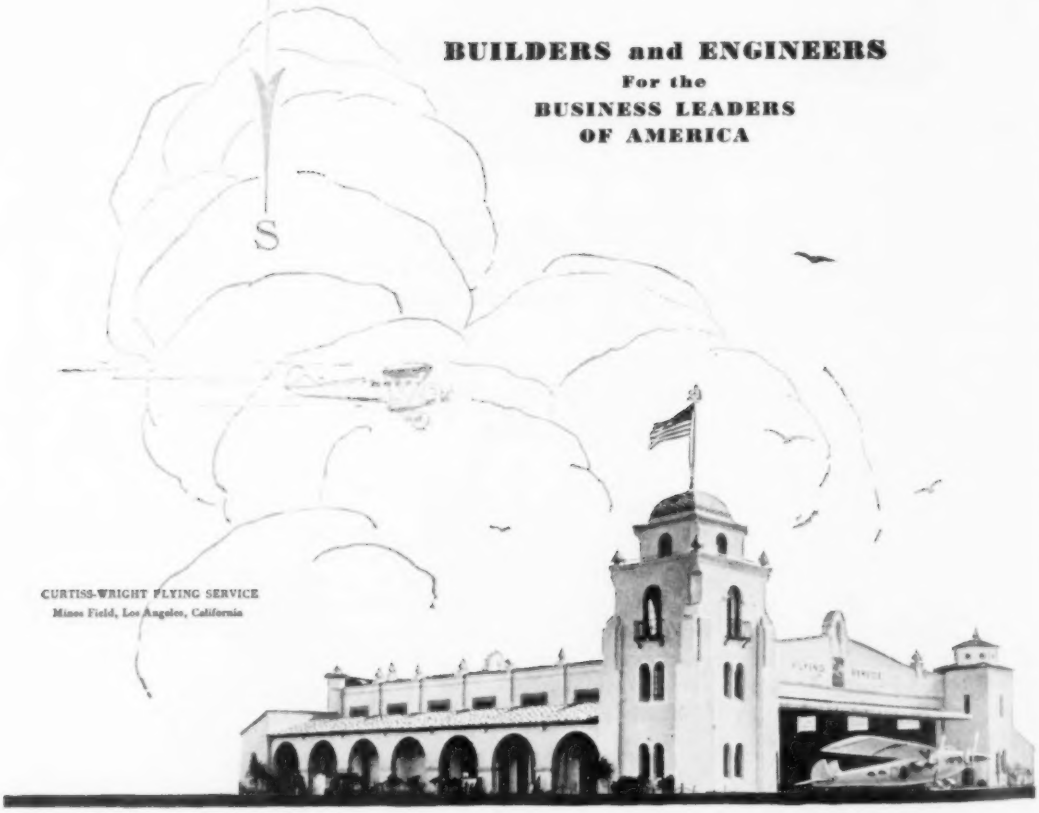

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